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BETTER FRUIT

VOLUME XIV

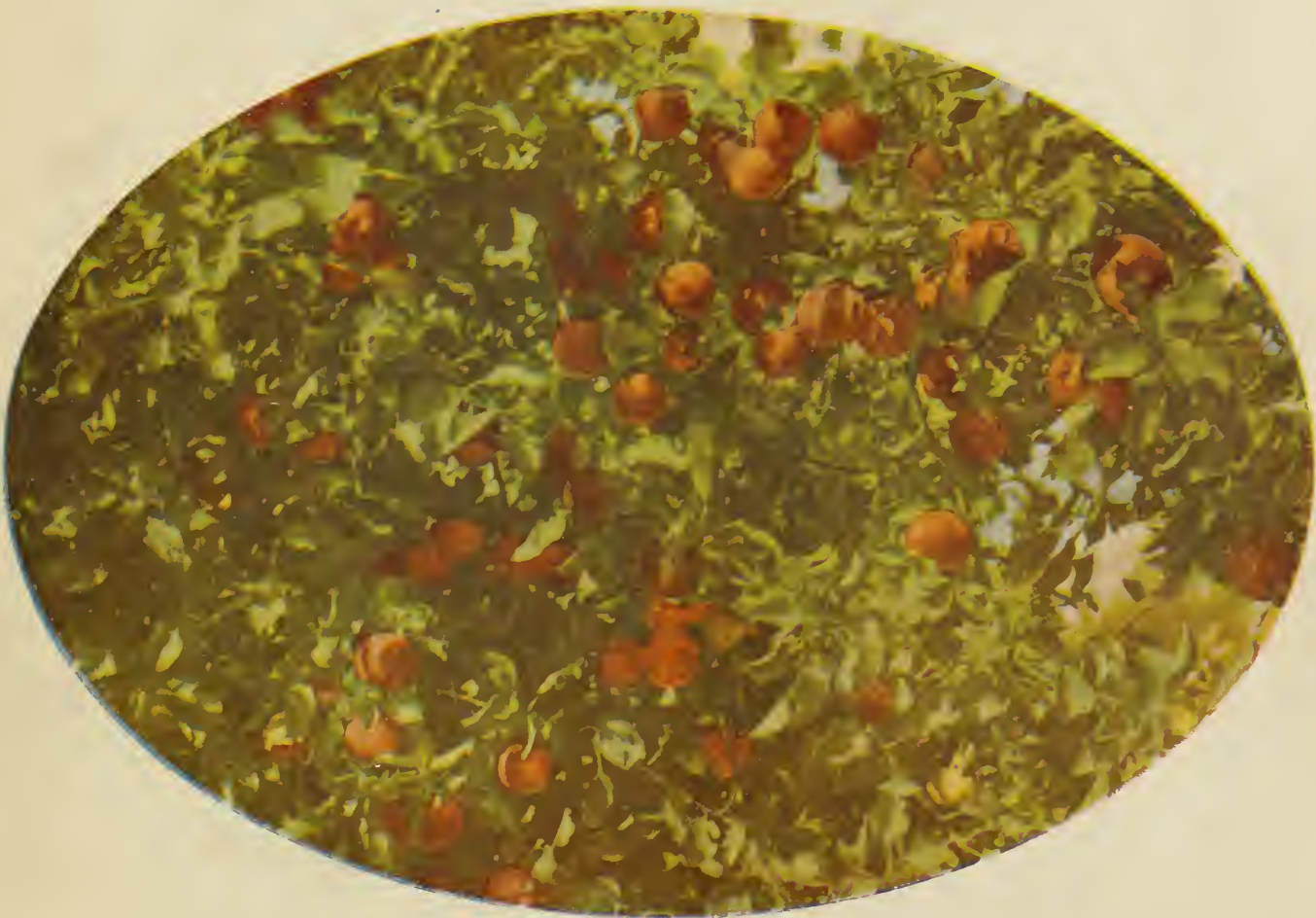
NOVEMBER, 1919

NUMBER 5

FEATURES IN THIS ISSUE:

Selecting an Orchard Tractor
The Why of Co-operation
The Value of Predatory Insects
Growing the Loganberry

Barnett C. R.
Dept. of Agric. Comp.
bldg.



VIEW OF AN APPLE TREE TAKEN IN THE PRODUCTIVE
WENATCHEE VALLEY, WASHINGTON

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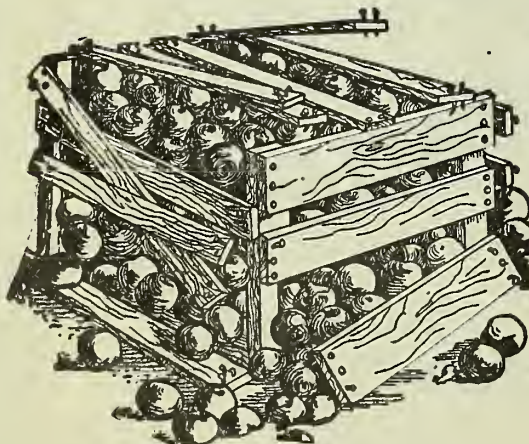
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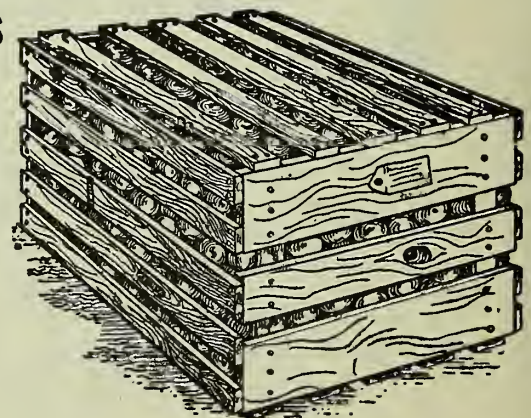
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NUMBER 5

The Tractor in the Orchard—Its Selection Important

By W. H. Walton

WITH prospects of the most successful year for orchard products in the history of the industry this year, 1920 looms up as the period in which many tractors will be bought by fruit growers. The tractor is particularly alluring to the orchardist, as in most cases he grows no other crop and has to buy horse feed the year around. By using a tractor he can dispense with horsepower entirely, as the advent of the motor truck is rapidly taking care of most of the hauling from orchard to railroad.

With ninety per cent of the orchardists of the Northwest in possession of automobiles, their fond hope now is to secure a tractor. This fact is shown by the large number of inquiries that are being made in sections of the country where tractors are being used in orchards and also by the quest for information from the engineering departments of agricultural colleges.

From investigations made by the agricultural colleges it is found that over seventy-five per cent of the orchardists who are using tractors are satisfied with the results they are getting and state that the only question as to the efficiency of a tractor in an orchard is in the right selection.

So many inquiries of this character have been directed to the engineering department of the Agricultural College of California that J. B. Davidson, connected with the state college experimental farm at Davis, recently published a short bulletin on the subject, entitled "Selecting a Tractor for the Orchard or Vineyard." In handling the question Mr. Davidson says that the largest number of inquiries that are now being received on tractors refer to what kind of a tractor to select. "This," he continues, "perhaps indicates that the selection of a tractor is not only a problem with a large number of ranchers, but also is a very perplexing one. Three or four years ago the inquiries were concerning the relative economy of tractor and horsepower, but now this question is not so prominent, and the outstanding question is, what kind of a tractor to buy. It is not always possible to answer this question. However, when the conditions under which the

tractor must work are known, it is easier to offer definite suggestions.

"In buying a tractor the dealer is almost as important to the purchaser as the machine itself. This conclusion is inevitable after coming in contact with an occasional example of bad faith on the part of the dealer or manufacturer

toward the purchaser. The sale of a tractor should carry with it a guarantee and assurance based upon the responsibility of the house making the sale, that the tractor sold is adapted to the work for which it is purchased, and that the seller intends to help make the tractor a good investment. The view held by a



A Cletrac Plowing in a Large Orchard.



A Best "25" Tracklayer Turning Over the Soil in a Cherry Orchard in California.

few dealers that their responsibility ceases as soon as the order is closed is not good modern merchandising. If the taking of a commission is to represent a 'square deal,' the seller is under an obligation to furnish the necessary repairs as long as the tractor may be used.

"It is fully realized that most successful machines had a small beginning, and good tractors manufactured in a small way should not be discriminated against, but fly-by-night concerns with undeveloped machines should be carefully avoided.

"Much is made today in present day tractor sales of the service rendered, and no doubt this is a very perplexing problem for the conscientious dealer as well as the purchaser. Service is usually referred to as the assistance given the tractor owner in the care, repair and adjustment of the tractor after it has been put to work. It is undesirable from the purchaser's standpoint to have too much of such service rendered promiscuously without charge, because the operator will call upon the dealer for more service than is necessary, and inasmuch as the cost of the service must in this case be added to the purchase price, it makes the first costs of the tractor too high. It would seem that only enough free service should be rendered to guarantee good faith and confidence upon the part of the seller and all other assistance not charged to a faulty construction should be paid for. It would seem that the best service arranges for providing quickly the tractor's future needs in the way of mechanical skill and repair parts, rather than to furnish an unlimited amount of gratuitous service. In selecting a tractor, it would be well to determine accurately the dealer's service policy.

"A tractor that is too large does not give good economy either in investment or fuel economy. For most operations, in orchard cultivation, a large unit is of little use because it is not needed for the implements to be used. On the other hand, too small a tractor does not economize in the use of labor, one of the principal items in the cost of opera-

tion. Practice seems to indicate that a tractor ought to have capacity to draw the same load as six work animals, or, in other words, a capacity of twenty-five to thirty inches of plows and a six-foot double-disk harrow or larger. Some orchard and vineyard men use a rather large tractor with equipment to cultivate the entire middle between the rows at once over. Such a plan saves much labor. At least fifteen drawbar horsepower will be needed where such practice is followed.

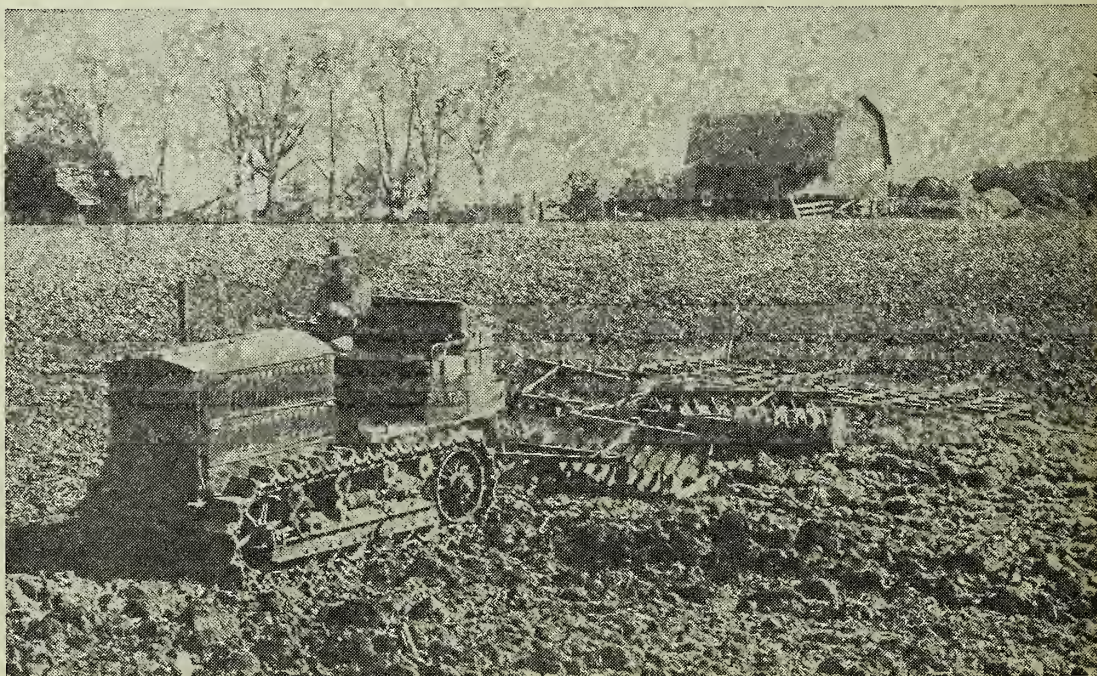
"The type of tractor will be determined largely by the character of the soil and operating conditions. If irrigation is practiced or the soil especially light, with little supporting power, the track-laying tractor has the advantage; while under other conditions, with little need of operating over soft soil, the wheel type of tractor has the advantage in simplicity and cost. The practice followed in pruning the trees will determine whether the tractor must be low or not.

"One of the most important factors in the selection of an orchard tractor is the matter of control. It is quite

necessary to be able to drive the tractor accurately and easily. Any purchaser would do well to test out these characteristics thoroughly before purchasing, observing whether the tractor can be manipulated among the trees with safety and without undue exertion on the part of the driver. A tractor that can be driven at any desirable and reasonable speed has a still further advantage. It is only by driving a number of tractors in the orchard that the importance of control can be fully appreciated. It perhaps will be well to mention that convenience and safety should be mentioned in this connection. Recently a rancher complained that it often required an hour or so each day to start his tractor. It is possible that the owner was much at fault, but it is obvious that a good tractor must provide facilities for sure and easy starting.

"There are three principal factors involved in the ultimate success of the tractor, i.e., the tractor, the work and the operator. Of these, no doubt the latter plays the most important part. To have success with a tractor, the operator must understand and feel for the machine—he must have faith in it and like to work with it. A man not in sympathy with the tractor is not apt to succeed with it.

"To care for a tractor, an operator must be able to inspect the tractor and detect trouble as it arises and before it becomes serious. Most of the troubles with tractors that are serious in character appear gradually. Furthermore, certain parts of a tractor are subject to wear, and the capable, efficient operator, as distinguished from the one that is not, is the one with the necessary skill to make the adjustments needed to compensate for wear. The principal item in the care of a tractor is lubrication. It is claimed by those making a study of the matter that nearly ninety per cent of the repair bills on tractors can be traced to faulty and inadequate lubrication. This may not have a direct bearing upon selection other than to point out that the lubrication system



A Five-Ton Holt Pulling a Double Disk and Drag Harrow.



An International at Work Disking in a Young Orchard.

should be carefully studied in making a selection.

"Finally, no tractor can do its best work unless used with suitable implements. These should be of such a size as to give the tractor a good load, not too heavy nor too light—not too heavy because overloading is the father of

much tractor trouble, and not too light because of the poor economy. Like the tractor, these tools must be easily managed. The modern power-lift plow has many advantages. The tractor implements with lever within easy reach are distinctly more convenient than those in use for horsepower."

A number of tractors are now being used successfully in orchard work, among the most prominent and efficient being the Fordson, Moline, Avery, Huber, Case, Wallis, Cletrac, International, and Holt caterpillar, the latter, however, being best adapted to large acreages.

The Oregon Growers' Co-operative Association

By Prof. C. I. Lewis, Organization Manager

THE Oregon Growers' Coöperative Association was formed because there was a distinct and imperative need for such an organization. We can perhaps state that our ideals and aims are bound up in three words, "Stabilize," "Advertise," "Oregonize." Our aim is, to first stabilize the prices received for our horticultural products. Succeeding in this, we will certainly stabilize our land values. This will of course stabilize credits. Stabilizing all these three will stabilize our prosperity.

The present prune situation on the Pacific Coast is one which needs careful study. We have in Western Oregon and Clarke County, Washington, at the present time about 33,000 acres in prunes, about half of which are not bearing. California has from 80,000 to 100,000 acres in bearing, with a similar amount just coming into bearing. The Pacific Coast crop of prunes this year, which is a big one, is about 250,000,000 pounds. Within two to four years our yield of prunes on the Pacific Coast will range from 600,000,000 to 800,000,000 pounds. The normal consumption of prunes in the United States is 100,000,000 pounds and normally we can export 100,000,000 pounds. The question is, what is to become of the additional tonnage which we will soon have to handle? We are told that we need not worry, that prunes are a staple food, that people will eat them all right. There is no

doubt in my mind but that people should eat them, and I sometimes seriously doubt whether an overproduction in food ever occurs, but this I do know, that underconsumption is just as bad for the producer as overproduction, and underconsumption is staring us in the face.

At the present time, prunes in the Pacific Northwest are largely handled by independent buyers, each selling to rather limited markets. Seemingly, no attempt has been made to establish an Oregon brand and to advertise it to the consumers as such, and to take steps to develop adequate market for the new tonnage. Suppose we should suddenly have a very large production of prunes. What is the grower going to do about it? There are several things that can be done. One thing would be to put prunes on the market so cheap that the housewives could buy more prunes for their money than anything else. That will undoubtedly move the prunes, but it will also move the orchards out by the roots. Another method is to organize and advertise, and attempt to develop new markets as rapidly as the new tonnage comes in. Also we must eliminate speculation from prune marketing. While perhaps relatively little speculation was done by local buyers, they do, however, turn the prunes over to speculators in the East, and in some cases \$2,000 to \$3,000 has been made out

of a single car of prunes by brokers who never see the crop, and \$5,000 could be realized on a few carloads of prunes which were sold early in the season. There is something wrong with this system whereby a man can go out and buy prunes the same day for half a dozen different prices and perhaps buy them on a different drop. Such a condition is not good for the producer, the consumer, nor the legitimate middleman. Prunes were being handled this year in such a way that in a little while they would be put on the grocers' shelves at a price that would keep them there. This would be fatal to the industry. We must not only get a good price to the grower, insure the middleman a fair profit, and the retailer his profit, but it must be handled in such a way that the commodity will move, will be offered to the consumer at an attractive price. Prunes which growers received 9 to 11 cents for in this state last year are now retailing at local grocery stores at from 25 to 36 cents. Certainly there is something wrong in that condition. The prune is following the history of the apple quite rapidly. It will be interesting to review that history for just a few moments. We all remember the prosperous condition of apples from 1906 to 1912; prices were very satisfactory; Chicago and New York were taking about all of our tonnage. In 1912,

Continued on page 25.

Does Experimenting with Native Predatory Insects Pay

By Elwin G. Wood, District Horticultural Inspector, Washington State Department of Agriculture

[EDITOR'S NOTE.—The experiment of collecting ladybird beetles in the fall and liberating them in the spring to prey on apple tree and other species of aphids has attracted a great deal of attention in the Pacific Northwest, not only from professional entomologists and plant pathologists, but also from practical fruit growers. Through its state department of agriculture Washington this year conducted quite an extensive experiment along this line, and California started this fall to collect these beetles to conduct a widespread experiment next spring. The professional entomologist in most instances is inclined to view these experiments with a skeptical eye and to voice the opinion that the more efficient way of eradicating aphids is by spraying, although a number of them admit that beneficial results have apparently been obtained where ladybird beetles have been used. The most definite data on this question that has been obtained was secured this year in the district adjacent to Walla Walla, Washington, by Mr. Elwin G. Wood, horticultural inspector in that district, which is published in the accompanying article. In this article Mr. Wood arrives at the conclusion that it does pay to collect and liberate these insects to prey on aphids.]

THE experiment of collecting ladybird beetles to prey on aphids has been the cause of many inquiries being made as to the actual results obtained and the method used in collecting and liberating the beetles.

In Walla Walla County the ladybird beetles begin colonizing as early as the first of July. This year on the fifth of July they had not begun to colonize in the creek canyons near Walla Walla, but on the eighth of July we found large colonies in the canyon of the east fork of the Walla Walla River in Oregon above Milton. By the middle of July very few ladybugs could be found in the orchards near Walla Walla. They continue to collect in the mountain canyons and by September large colonies may be found in the damp places in the canyons of any of the creeks flowing into the valley. They collect in great masses, crawling over damp rocks and logs, and may be collected any time in September and October. As winter comes on they crawl down into the pine needles at the base of the trees and under rotten logs and stumps. In April of the following spring they emerge from their hiding places and for a few days crawl over the damp rocks and stumps in swarms and then disperse in search of feeding and breeding grounds. Very few dead beetles can be found in the places where they have spent the winter.

This spring in upper Mill Creek Canyon colonies of beetles began to emerge from their hiding places and appeared in swarms crawling over rocks and logs on about the 10th of April. They were thickest about April 15, and by the 20th they had all disappeared and no more colonies were observed after that date. This suggests that there are about ten days in the spring of the year that the beetles may be gathered and taken to the orchards where most needed. This, too, would be as early as we liberated the ones we had in storage.

Collecting and Storing.

Last fall sixty-eight boxes of beetles were collected and stored by Frank George and H. L. Miller. Of these, fifty boxes were made of apple box lumber

sawed in two lengthwise, giving a box when made up 10x10x11 inches and screened on two sides. These were filled about one-third full of dry excelsior and three pounds of ladybugs or 90,000 beetles were put in each. The rest were beehives screened on the top and bottom. Excelsior and four pounds of beetles were put in thirteen of them and six pounds of beetles put in the other five. This made a total of 232 pounds of beetles. This spring the county agent gave us 72 pounds of the beetles he had stored, making a total of 304 pounds or 9,120,000 beetles liberated by us this spring. In addition to this the county agent liberated 36 pounds or 1,080,000 beetles in alfalfa fields in Walla Walla County.

The beetles were placed in three kinds of storage and accurate data kept on forty-nine of the cages. Twenty-six of the three-pound cages were put in cold storage at 40 degrees on October 26, six cages were put in a basement cellar or common storage on November 8 and the rest were stored above ground out of doors and protected from the snow and rain.

From a study of the data obtained we discovered that almost 95 per cent of the beetles in cold storage were alive at the time liberated, and if we count out two cages on which water dripped, causing a high mortality, practically 98 per cent of the beetles lived, and the cages taken out on May 2 were in as good condition as those taken out on

71 per cent were alive, while of those liberated after April 24 only 40 per cent were alive. Up until the first of April the beetles in the cages stored out of doors appeared to be nearly all alive and in good condition. These observations indicate that outdoor storage would be satisfactory if the beetles were liberated by the first of April.

The beetles given us by the county agent had been stored in the same cold storage room with ours and were put up in apple boxes, six pounds in a box. They were liberated about the fourth of May and about 70 per cent of them were alive.

Ladybird eggs were found on April 8 at Blalock. They were undoubtedly laid by beetles that had hibernated under rubbish in the orchard.

As soon as the beetles were liberated they began to hunt for food and within three days were laying eggs on aphid-infested trees. The first larvæ from these eggs was observed on May 21 and most of them were hatched by the first of June. Data on observations made on May 22 and 26 is given in the following table. These counts were made in four prune orchards in different parts of the Blalock tracts. The eggs were counted on each of five trees in each of the orchards and the figures given are the average of the five. Only the eggs that could be seen from the ground were counted and the number would undoubtedly have been larger if the tops of the trees had also been searched.

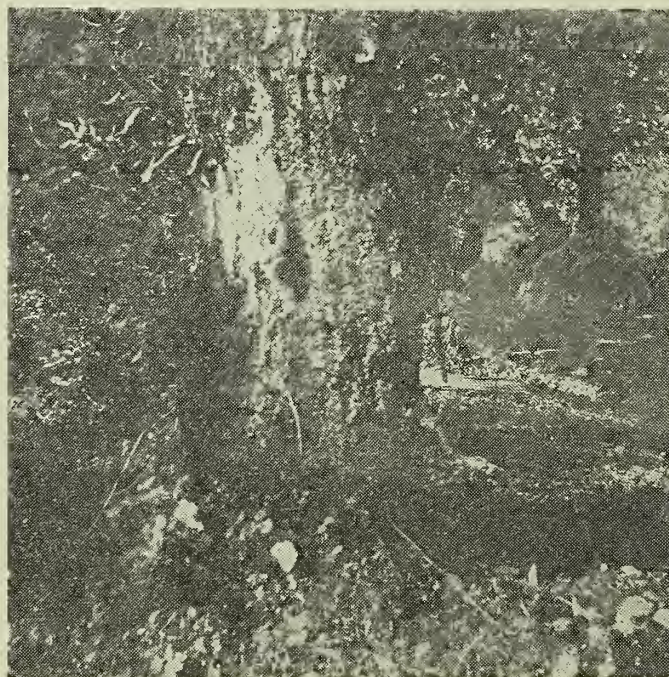
Name of Owner	Date liberated	Date eggs and larvæ were counted	Total eggs	Total larvæ	Total No. of eggs & larvæ on single tree
Frank George	April 24	May 22	345	415	864
Devine	April 25	May 26	449	415	864
Julius Levy	April 25	May 26	200	150	350
Obenholtzer	April 25	May 26	157	152	309

April 17. Of the beetles in common storage only 76 per cent were alive on April 17. Of the ones stored above ground out of doors an average of half of them were dead when liberated. However, of those liberated on April 17

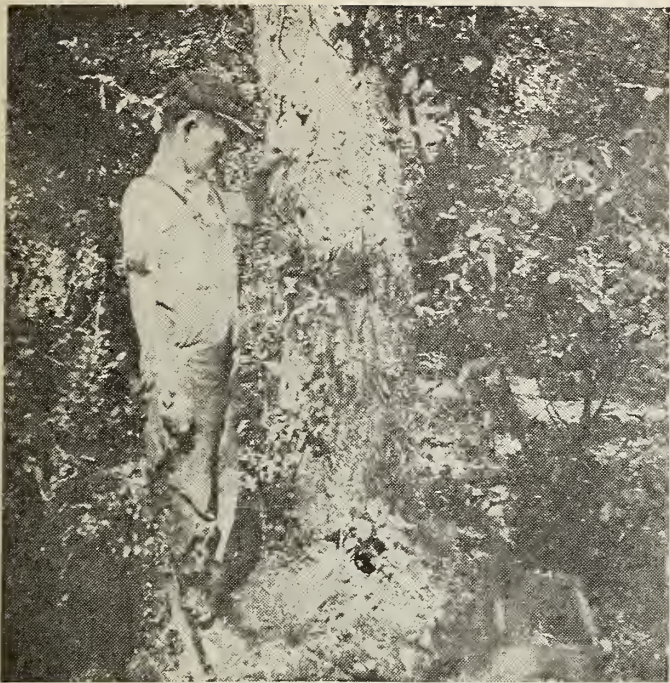
The trees in these orchards were quite badly infested with aphids. Devine's were so bad that he had sprayed with Black Leaf 40 a few days before. The other men put off spraying until we could see what the ladybugs would do.

So far as I know, Devine was the only man who sprayed for aphids in Walla Walla County this year. On June 18 no live aphids could be found on the trees at Levy's that had been quite bad three weeks before, and no ladybugs or larvæ were present. On an apple tree in the same orchard that had some woolly aphids on, three adult beetles and five egg patches were found. Three larvæ were found in the curled leaves of another apple tree that had a few rosy aphids.

Nowhere in the county did the aphids get bad. At Blalock on July 8 there were aphids on the water sprouts in a good many trees and very few ladybugs were present. We brought down twenty pounds from East Walla Walla Canyon and liberated



Ladybird Beetles Colonizing on the Trunk of a Tree.



Another View of the Beetles Colonizing. They can be seen on the trunk of the tree and also at its foot.

this season, and credit for this was given the ladybird beetles. Four cages were sent to Mr. Wills at Wawawai. Mr. Wills states that he thinks they were a great help in controlling the aphids, as he found them at work in all the trees that had aphids. Two cages were sent to Mr. Darlington in Wenatchee. Mr. Darlington writes that he cannot give anything of any particular value on the ladybird beetles because there was very little trouble from aphids in any part of the



Box of Ladybird Beetles Ready to Be Transported to Cold Storage.

them in the Blalock orchards. These ladybugs quickly scattered and some of them were found eating aphids the next day. On the second day a few fresh egg patches were found, which were evidently laid by the ladybugs liberated two days before. During the next few days a considerable number of ladybugs were observed on woolly aphids. However, large numbers were found on potatoes and weeds. They seem to prefer the naked aphids to the woolly ones.

Reports from Other Sections.

Twenty-two three-pound cages were sent to other parts of the state. Four were liberated by Mr. Andrus in Clarksonton. Regarding them Mr. Andrus writes that according to Fred Ranson and Mr. Steininger the aphids did little damage

Wenatchee district this year. It was quite noticeable, however, that where aphids did appear ladybugs were there in plenty to keep them in control. On the other cages that were sent out we have no data to indicate whether they were a help in controlling the aphids or not.

Conclusions.

As a result of our experiments with the ladybird beetles during the past year we conclude that:

1. September or October is the best time to collect them. However, it might be possible to collect them during a period of about ten days in April.

2. The best method of storing is in small boxes with dry excelsior and about three pounds in each box, the boxes being screened on two sides and kept in cold storage at 40 degrees. By

this method 98 per cent can be brought through the winter in good condition.

3. Common storage or outdoor storage is fairly satisfactory if the beetles are liberated about the first of April.

4. They should be liberated about the first of April or early enough in the spring so that the eggs will be hatching before the aphids begin multiplying rapidly.

5. Although there may be several other important reasons why there were so few aphids this year, the ladybugs were undoubtedly a large factor in keeping them in control.

6. The practice of storing ladybird beetles and liberating them in the spring should be continued and more data collected to prove that they control the aphids.

Planting and Growing the Loganberry and Its Future

By C. M. LaFollette

IN the past few years and particularly during the last two years the loganberry has come to be recognized as one of the most valuable bush fruits that can be raised, and, like the Holstein cow in the dairy world, is probably the best all-purpose berry that is now grown. The demand for it is becoming very great and it is now being extensively planted.

The loganberry will grow almost anywhere in Western Oregon, Western Washington and California, but is especially adapted to the Willamette Valley. As you go farther south in Oregon the climate is a little too warm and dry to obtain the best results with it, although it will grow on almost any soil as do other berries. It thrives best, however, on a heavy clay loam or rich river bottom sandy soil. I do not recommend light sandy soil for the best results. A great deal of our prairie soil where it has good water drainage is well adapted to the loganberry and some of the best patches we have are to be found in these locations. Also we

have some very good fields in the foothills, but as you get higher up the berries are inclined to dry out in the hot months.

The loganberry will not thrive in cold climates. When the mercury drops below 10 degrees above zero the vines will perish. The best time to plant loganberries is in the spring, usually during the month of April, or as soon as you can get good, strong plants and the soil is in the proper condition. They may also be set in May with good results. The plants should be from four to six inches high before planting. It requires 608 plants, set eight feet each way, or 775 plants set seven by eight feet apart, to plant an acre. They should be set about eight feet in the rows, with the rows from seven to eight feet apart. I believe, however, that setting the rows seven feet apart is equally as good, as it makes more shade for the ground and also has the advantage of giving one-seventh more rows on the same space of ground.

After being set, the following fall or

winter the vines should be trained up. For this we use from three to four wires No. 12 size. Three wires will do very well, but four are much better. The bottom wire should be placed about eighteen inches from the ground and the top wire from four to five feet above the ground, the latter distance being preferable for heavy soil. The rows should always be planted to run north and south if it is practicable, as it divides the sunlight on both sides of the row. In training the vines they should be distributed equally over the wire and trained as tightly as possible, so as not to allow them to be baggy or in bunches. A well trained patch has a great advantage in being cultivated, or at picking time. Picking usually commences about the 20th of June when the season is normal. Most of the berries are gathered by women and children, and as the loganberry season comes between the other fruit harvesting seasons pickers are usually plentiful and make good wages.

When the berries are harvested,



A Properly Set Out Loganberry Yard.

which is about the last of July, the old vines should be cut out and the new canes trained up. The prunings from the old vines are usually cut up with a small disk harrow with enough weight put on it to accomplish this purpose. The old vines, when they are disposed of in this way, make good fertilizer for the soil, as well as being an economical way in getting rid of them.

With the demand for loganberries for so many different purposes and the world as a market for them, they are destined to become one of the most profitable of fruits if they are properly planted and given the right kind of care, which, it may be added, is far less than is required to grow many of the other fruits that do not produce as much revenue.

New Containers Save Michigan Grape Crop

By a Michigan Grape Grower

THE grape growers of the State of Michigan, especially the section of St. Joseph, Michigan, and Benton Harbor, rejoiced over the bumper grape crop of this season. This year's crop is looked upon as the best crop since 1911, all of the grapes being fully ripened and fully flavored. The greatest problem which the grape growers had to solve was the matter of getting a sufficient number of grape packages for the shipping of their big grape crop. The package situation was a very serious one and for a while it threatened many a grape grower, the package manufacturers making only sufficient grape

packages for a 70 per cent crop, as forecasted.

However, the old adage that every cloud has its silver lining was truly applicable in this instance. A progressive and far-sighted grape grower, Mr. Walter Donaldson, thought it a good idea to press into use the universal bushel shipping package, using the centerpost reinforcement. Most of the growers at first scoffed at the idea and suggestion. However, Mr. Donaldson felt that it would pay to try it.

A carload of grapes was loaded with this new container with the centerpost attachment, and the growers were star-

ttled at the returns this car of grapes brought them—\$85 a ton as against \$70 a ton for the same grapes when shipped in jumbos.

The growers were quick to see that it was to their best interest to ship their grapes in universal bushel packages, using the centerpost to reinforce the package, so as to bring the grapes in perfect condition to destination. Every available bushel basket that could be found was filled with grapes. Several cars of grapes were loaded with the universal basket.

In putting into service the universal packages as grape packages, the entire grape crop of Michigan was saved, and many a grower is mighty thankful for being able to get a supply of universal packages.

Again the fact demonstrates itself that it pays to do things slightly different, as the big returns received by Michigan grape growers who tried the experiment of shipping in the new basket proved conclusively.

The Gravity Conveyor

If Isaac Newton could, without too greatly inconveniencing himself, return to old Mother Earth and visit the famous fruit packing district in Hood River, Yakima and Bitter Root Valley during a busy packing season and observe the wonderful amount of work being performed by his revelation, gravity, he would be justified in remarking, "Well, I'll be jiggered," or some other more forceful exclamation of surprise. His mind would revert back to the brief space of two hundred years or more and he would again visualize himself under the old apple tree and see again the apple descending and fall true to the center of gravity.

It is the same old gravity, not an ounce greater, not an ounce diminished, that is now performing such wonderful work and bringing about such gratifying results in the indoor transportation and handling of this delicious fruit.

Gravity, securely harnessed, and under the control of a gravity ball-bearing roller conveyor, is now performing all of the hard, laborious work in the packing, warehousing and shipping of thousands of cases of apples that are raised and handled annually in this favored district.

Gravity literally takes most of the Man-ual out of packing and warehousing, conserving and releasing the available local labor supply for the many other demands made on it during the comparatively short harvesting season. The filled open baskets or boxes are placed on receiving portable sections of the gravity conveyor and friction-free are rapidly transported into the packing room.

Resting on sections of a gravity conveyor, the fruit is transferred and packed into the empty cases. The filled cases are then allowed to proceed on the gravity conveyor, usually leading to an automatic inclined elevator, released to a gravity conveyor line on the upper floor, and conveyed direct to the storage pile. Portable sections are again used to excellent advantage for transporting either to wagons or directly into cars.



Grapes in a Michigan Vineyard Packed in a New Way

Bees An Invaluable Aid to the Orchardist

By George W. York, Spokane, Washington

IT was with considerable interest that I read the following paragraphic note in the September BETTER FRUIT:

"Lack of pollenization is reported by E. B. Kelly, horticultural inspector with the Washington department of agriculture, to be the cause of a big loss in the apple crop in the Inland Empire. Mr. Kelly says that orchardists in this district must pay more attention to the raising of bees, either with or without regard to the value of the honey they make."

It was my whole business for over a quarter of a century to advance the interests of beekeepers, as editor and publisher of the *American Bee Journal*, a publication devoted exclusively to beekeeping. During all those years it frequently came to my attention, through reports from beekeepers who also were fruit growers, that bees were exceedingly valuable as pollinators in the orchards. While most people seem to regard the little busy bee's work as a honey-producer as being the most important object of its existence, it may yet be shown that its value as a pollinizer of fruit is far and away more valuable to mankind than is its sweet product—honey.

So when I read the suggestion by Horticultural Inspector Kelly it came to me with great force. I was reminded that just recently a wise orchardist in the Yakima Valley has already arranged with a local beekeeper to place his hives of bees in his (the fruit grower's) orchard next spring, for the sole purpose of aiding in a more thorough pollenization of the fruit blossoms, and for this work he has agreed to pay the beekeeper five dollars per hive, regardless of the amount of honey the bees may produce while thus located.

But one unfortunate thing about the keeping of bees in or near the orchards in the Yakima Valley, and doubtless elsewhere as well, is the poisoning of bees through the spray material that drips off the trees on the alfalfa blossoms found under the fruit trees.

While recently in Yakima, and talking with some of the beekeepers there, they thought it would be possible to mix something in the spray material that would be offensive to the bees, so they would not visit the blossoms that had caught the spray. But another beekeeper and orchardist from the same

valley, who is exceedingly well informed, felt that mixing the offensive material in with the sprays would not accomplish the desired object, as the bees work on such sprayed blossoms only when there is a dearth of nectar elsewhere, and so he thought nothing could be used to prevent them working on such blossoms when they were forced to visit them in the absence of other bloom or feed. He was of the opinion that it would be necessary to enact a law compelling the orchardists to cut the blooming alfalfa from beneath the trees for hay, just before spraying, and thus remove the attraction that drew the bees to their death.

Surely the orchardists will be glad to do anything within their power to preserve the work of the bees, for they are rapidly realizing that without the full aid of the bees they could not possibly hope to harvest the large fruit crops that they would otherwise secure.

It is surprising, and also exceedingly interesting, to note how closely allied are the efforts of both the human and the animal in this instance. Through the work of the orchardist and the bees not only is a better and larger crop of fruit produced, but also an increased return in the way of a honey harvest. The results of harmonious coöperation are almost perfect in this case. Hence it behooves the fruit growers everywhere to encourage the keeping of bees within easy flight of their orchards. There should be the utmost sympathy and coöperation between the fruit growers and the beekeepers, when their interests are so clearly and exceptionally one.

I believe a thorough discussion of this subject would be of value to all concerned. There must be ample evidence scattered around in very many localities which if assembled would help to bring into closer relation the interests of both beekeepers and orchardists. More and more we are all coming to appreciate the truth of the utterance that "no man liveth unto himself." Our interests and our hopes are mutual. Only by the heartiest coöperation of all the allied lines of endeavor can we hope to make the progress that all concerned so enthusiastically desire.

High Road to Appleland as Seen by New Yorker

By Sylvanus Van Aken

THE phenomenal growth of the fruit industry in the country during the past few years has not alone been due to improved business methods of packing and marketing. Nor has it been due to cool nights, the warm days and the amount and intensity of the sunshine. Other factors have been instrumental in promoting this rapid advancement. The growers have, first, exercised care in selecting varieties best adapted to their localities; secondly, they have paid particular attention to the types of soil best adapted to these varieties; thirdly, they used judgment when selecting the

proper location as regards site, slope, irrigation, transportation, etc., and lastly, they were careful in planting. When it comes to planting a commercial orchard the prospective grower should thus make haste slowly. Mistakes made in fruit growing are often irreparable. It is my purpose to give such advice as the progressive growers in this section have, by common experience, demonstrated to be practical and useful.

Locate Right—Orchards Can't Move.

The proper selection of a site is vital to successful orcharding. Faulty selections have not infrequently been made

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by growers or speculators, and the result has been failure. When choice is permitted, the orchard should be on a more elevated spot than the surrounding country. This insures good air drainage, as well as good soil drainage. As cold air settles to the lower levels, low places are more subject to frost; hence, low-lying basins or pockets or practically level places should be avoided.

Careful attention should also be given to the selection of suitable slope. In the Hudson River Valley, owing to the high slope on both sides of the river, such sites have proven ideal fruit sections, for the following reasons: First, the soils do not become warm until late in the spring and this retards the blossoming period; second, a better protection from the prevailing winds can be had; third, the soils are usually deeper and richer. These conditions apply more specifically to sections having a long growing season. Where the growing season is short, a southern exposure may be preferred, as the larger amount of sunshine brings about an earlier ripening of the fruit. Higher color is sometimes obtained from southern slopes.

Soil and Water.

As regards soils, light loamy soils with deep and porous sub-soils are, generally speaking, best adapted to the growing of the apple. As the character of the soil influences to a certain extent the character and quantity of the product, the grower should keep in mind this fact when locating the fruit planta-

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tion. He should select a soil suitable to the varieties he wishes to grow.

Proximity to water is important. Orchards located near lakes or large rivers are less liable to injury from radical climatic changes than those farther away. Near large bodies of water the development of vegetation in the spring is retarded and the season is extended in the fall. Immunity from late spring frosts is practically insured.

An Outlet for Your Product.

Nearness to a shipping station is a point to consider in selecting a location for an orchard. As fruit is usually grown in a commercial way for a distant market, it is well to locate where there are competing lines of transportation, which usually enables one to secure cheaper rates.

One of the first and greatest problems confronting the prospective grower is the selecting of the proper varieties for commercial planting. Several factors, such as soil, climate, etc., must be taken into consideration. A variety that does well in one section probably will not do equally as well in another, and the

grower should confine his attention to the varieties that flourish in his locality. Nothing is gained by lamenting over the fact that a certain variety can not be grown that is bringing such handsome returns in another section.

The market demand is another factor in the choice of varieties. The apples that find readiest sales are those that are fairly large and highly colored. The American people prefer a highly colored apple. Many of the yellow sorts, however, are selling remarkably well, especially in the English markets.

In starting the commercial orchard, the grower should insist on having nothing but first-class trees, no matter if the initial cost is a little greater. It is seldom economy to buy cheap trees. The following points constitute a first-class tree:

First, a well-grown, medium-sized specimen. Second, a tree having characteristics of the variety. Third, a tree that is healthy and free from injurious diseases and insects.

If the growers are not familiar with the variety he wishes to purchase, it

will be well to deal through a reliable, well-established firm in his locality and also consult men you know are reliable and up in those matters. It is then generally safe to rely upon the nurseryman's judgment, for his business reputation rests upon the service rendered.

As regards the age of trees to plant, this section has been, and is now to a certain extent, advising the selection of two and three-year-old trees, though some growers are now taking to younger trees. Some prefer one-year-old trees for the following reasons: First, young trees make a more vigorous growth than older ones. Second, in removing from the nursery less of the root system is left. Third, with the root and stem system intact, the transplanted tree does not receive such a severe shock. Fourth, the head can be formed at any height to suit the convenience of the grower. Fifth, a better yield is obtained.

New Spraying Materials

By Prof. R. B. Cruickshank, Ohio State University

New materials and methods for the control of insects and diseases are constantly appearing, and if any of these offer the fruit grower a saving in money or time they become a matter of immediate interest.

Arsenate of calcium, as a substitute for arsenate of lead, is beginning to attract attention. Manufacturers have been gradually improving it for the past few years and it promises perhaps to be a spray material which will do the work of arsenate of lead at less cost. Calcium arsenate runs 10 to 12 per cent higher in arsenic oxide than lead arsenate powder, and at least 50 per cent cheaper. Using the calcium arsenate at the rate of one pound to fifty gallons, this would mean a saving of about 15 cents per 50 gallons of spray. Calcium arsenate has been found to be effective against codling moth, perhaps does not stick as long as lead arsenate, does not injure foliage when used with either liquid or dry lime-sulphur, bordeaux mixture or lime. In Maine, for the past two seasons, the percentage of merchantable apples has been decidedly in favor of the arsenate of calcium as compared with arsenate of lead. A general and universal recommendation of this material would be dangerous, but it is certainly worthy of trial by growers, as it holds the possibility of a considerable saving.

Study Northwest Apple Growing Methods

A most interesting visitor at the office of BETTER FRUIT during the past month was David H. Rundle, of the Australian, Tasmanian and New Zealand fruit growing world, who was on the Pacific Coast studying fruit growing and packing methods. Mr. Rundle is also interested in coöperative fruit growing organizations as conducted in the Northwest, with a view to organizing the growers in the South Seas countries along co-

operative lines. In fact, he has already done considerable work of this kind in Tasmania, which grows the largest crop of apples in that section of the world. Mr. Rundle left Seattle for Nelson, New Zealand, early in October, where he will continue his work of organization in that country.

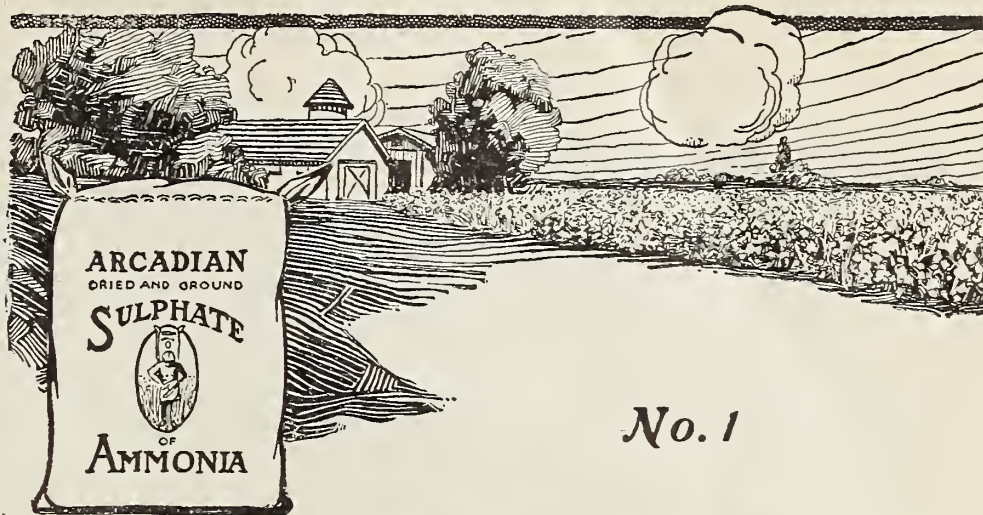
While here he stated that orchardists in the Australian group of countries were not realizing the returns they should from their fruit owing to improper methods of marketing and packing. The custom is largely in vogue there, he said, of letting the buyer set the price, which resulted in the grower having to take what was offered him, or taking the alternative of sending it to the auction room, where it sold for whatever the large buyers wanted to pay. These conditions it is hoped will be changed if a sufficient number of growers can be secured to form organizations that will market their own fruit. While there has been much done and said on paper in regard to coöperative organization in Australia, Mr. Rundle reports the situation far from satisfactory. "One of the things we are especially interested in," he said, "is your method of sizing apples. Our growers have not yet learned how to standardize their packs. They have been putting apples of all sizes in the same box. We hope by studying the packing methods here to eliminate this condition. While here I have arranged for the purchase of fourteen power apple sizing machines manufactured by the Ideal Fruit Grader Company at Hood River."

In company with J. A. Campbell, assistant director of the horticultural division of the department of agriculture of New Zealand, Mr. Rundle had spent several weeks in the Pacific Northwest investigating fruit growing conditions before his return home.

Nut Growers to Meet in November

In answer to many inquiries being made to him about walnut growing, J. C. Cooper, president of the Western Walnut Association, through BETTER FRUIT says that nearly all the nurseries in the Pacific Northwest sell walnut and filbert trees. Mr. Cooper states that at present there is a shortage of grafted walnut trees and that growers are planting black walnuts and grafting them to English varieties. Very valuable literature on walnut and filbert culture may be secured by those interested by securing the published proceedings of the Western Walnut Association for 1918, which can be had for a one dollar membership fee sent to Knight Percy, secretary, at Salem, Oregon.

The fifth annual meeting of the association will be held at the Multnomah Hotel in Portland, November 12 and 13 next. There will be a fine nut exhibit in connection with the meeting and the public as well as walnut growers is invited to attend the meetings.



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Growth and Value of the Canning Industry

By J. O. Holt, Manager of the Eugene Fruit Growers' Association

ABOUT the year 1795 the French government offered a prize of 12,000 francs for the best method of preserving fruits and vegetables aside from pickling or dyeing. This prize was awarded to Nicholas Appert in 1810, thus canning was not an accidental discovery but the result of the hard and intelligently directed labor of a French scientist.

Although a French invention, its development has been largely due to American enterprise. At the present time it is only in the United States that canned goods are packed in water or syrup. Other countries pack largely jams, preserves and fruit and vegetable pastes. For instance, in Italy tomatoes are canned by being peeled, pulped, part of the moisture removed and then canned as a thick paste.

On the continent peaches and apricots are canned the same way. Thousands of cases of this paste are being exported from this country.

I will not take the space to follow the development of the canning industry from the time of its beginning in France, interesting as it is. Its growth was slow until the Civil war. Since that time it has grown with increasing momentum until it is not only one of the big industries but one of the vital industries of our country.

It is the canner who takes the surplus perishable products which would otherwise be lost, and preserves them for consumption through the balance of the year. If it was not for the canner perishable fruit would be in our supply at picking time, the price would become so low the producer would lose money and production would be cut to a half or a third of the needs of the public.

The industry has developed in rather well defined belts. The best corn is packed in Maine, Northern New York, Wisconsin and Michigan.

Tomatoes take a more southern belt country—in Maryland, Virginia, Southern Ohio, Indiana, Illinois and Utah, while peas are packed in a belt between and overlapping the other two. By far the larger part of the fruits are packed on the Pacific Coast.

The total pack of salmon in 1918 was eight million cases, peas ten million cases, corn eleven million cases, tomatoes fifteen million cases, and a total pack of all sorts of vegetables of 48 million cases, while the total pack of all kinds of fruits for the same year was 11 million cases. There were packed in Oregon last year about 750,000 cases of fruits and vegetables, including jams, jellies, etc. Of this amount only about 25 per cent was vegetables.

I expect to see our most rapid development in the future to be in the canning of vegetables. Not necessarily tomatoes and peas, but string beans, beets, brocoli, carrots, parsnips, turnips, etc. Our climate is especially adapted to produce these with a flavor and texture which cannot be excelled elsewhere. We are now selling these vegetables in car lots to restaurants and

hotels. These people find it cheaper to buy the canned article than to buy in the local market, and pay the cost of peeling and cooking them. The canner takes the vegetable fresh and crisp from the fields, prepares them by machinery and cans them before they have time to wilt. Fruit is sometimes improved by standing awhile after picking but a vegetable immediately begins to deteriorate.

Just as the Civil war made canning a commercial industry the present great war has proven it to be a national necessity. No industry is going forward faster than this. Machinery which is the best obtainable in one year goes to the junk pile the next season to make room for improvements.

Canning factories today are being made more sanitary than most of the kitchens in our homes. People are learning that canned foods are the purest, cleanest and most sanitary foods obtainable.

One of the hardest lies about canned goods to down is the old bugaboo "Ptomaine Poisoning." Even now in this enlightened age occasionally some ignorant editor will publish a story of ptomaine poisoning from eating canned goods. Officials of the National Canners' Association have for years been running down these stories and trying to find an authentic case of ptomaine poisoning traceable to canned goods, but without success. Two years ago a committee headed by Dr. Roseneau of Harvard University was appointed to try to settle this matter. After studying

51 cases involving 1,500 persons, they have been unable to verify one case of ptomaine poisoning traceable to canned goods. Their verdict is summed up as follows:

"It is becoming convincingly clear to us that there is no such thing as 'ptomaine' poisoning, and that canned goods have a clean bill of health. They are, in fact, the safest foods that come to our tables." Ptomaine poisoning has often been used as a cloak for professional ignorance.

The canning industry is prosperous and expanding rapidly in a great many directions, but the future is not altogether clear of difficulties. Complication in many locations is becoming so keen that it is impossible to run the plant in the most economical way and get the most out of the product for the man who grows it, and in order to do so the plant must run at capacity for the greater part of the season. But when the canner must not only take into consideration the hazard of the elements but compete with other canneries and the fresh market for his supplies he cannot pay as much or sell as cheap as he should. I predict that it will not be many years before the canners will have to grow their own supplies or the growers will have to own their own canneries. The canneryman is a criminal if he adds one cent more than absolutely necessary to the products as they pass through his hands from the producer to the consumer. The big meat packers are reaching out their tentacles to take in the canning industry and are making some headway. I see no better way to solve these problems than by supporting the Growers' Coöperative Association.

Adding to the Life of Orchard Implements

By G. W. Jaap

"LOCKING the barn door after the horse is stolen" is an adage so old and so commonly used that it has lost considerable of its truth and meaning with the passing years. Nevertheless it is undoubtedly true that in the care of farm implements this same practice of not locking the door is very commonly and generally used.

Farm and orchard implements represent a considerable investment and because of high replacement values are worth more today, generally speaking, than they were at the time of purchase. Farm implements should be given the greatest care and protection from the weather. They are subjected to all sorts of hard wear under different conditions, they are used in the hot sunshine, in the rains, they are allowed to stand in the open exposed to the action of wind and weather, making them victims of decay and rust, and leaving them with years of usefulness gone, worn out before their time and a big cash loss to their owner.

It costs very little to insure your house compared with the cost of replacing the building. It costs only a trifle to protect farm implements against

the ravages of weather compared with the cost of replacing them. A few dollars worth of paint will add years of life and service to these implements and more than repay the owner for the investment and time he spends in protecting his implements by painting.

It is unnecessary to go into detail concerning the action of water on wood or metal. Every farmer knows that water will rot wood and rust metal. He knows that when decay sets in it does not take very long before the wood parts of his machinery are thoroughly rotted away, and that when rust attacks the metal parts it is practically impossible to stop its action—it eats deeper and deeper into the metal until the part is so weakened as to be useless.

Paint is the best protection you can give to farm implements. All decay begins at the surface and generally eats its way deeper. It follows then, that by protecting the surface with a coat of good paint it is impossible for decay to attack the surface, and since it cannot reach the surface because of the protecting film of paint, it is impossible for parts to rot or rust.

It is not good policy to satisfy your-

self with just any old kind of paint. The best paint is the only kind you should buy for use on farm implements, because this paint is made with a lead and zinc base with pure linseed oil, which when properly applied offers genuine protection against wear and weather, the lead and zinc forming as it were an armorplate which successfully prevents decay from attacking the surface of the implement. The surface to be painted must be clean and free from grease or oil and perfectly dry. It is essential that the implements be free from grease and thoroughly clean and dry before a coat of paint is applied because the paint will not adhere to a greasy surface and the best results cannot be obtained.

Touch up the bare and worn spots with a thin coat of paint and allow to stand until perfectly dry, then apply a smooth, even coat over the entire surface, using a good bristle brush.

The best implement paints dry with a rich oil gloss and give durability and beauty of finish which at once increases the value of the implements, adds years of service to its life, and stamps the farmer as being progressive and possessed of good business judgment.

Wagons on which the color finish is not worn, but which have lost their luster, can be greatly improved not only in appearance but in actual wear and weather-resisting qualities by a coat of wagon coach varnish, a clear finishing varnish which gives a hard, tough, durable and elastic finish which is sun-proof, windproof, waterproof and frost-proof.

Take an inventory of your farm implements. Set down the cost price and then figure the replacement value. You will find that your farm implements are worth considerable more today than they were when you bought them. Then figure how much these implements are worth to you each year and how much it would cost if you were obliged to be without them during your busy season. Figure how much they actually produce for you on your investment and then ask yourself if your farm implements are not deserving of the greatest care and attention; if it isn't worth while for you to give them maximum protection against wear and tear and the action of the elements. Your answer will be "yes."

The best time to paint implements is in the fall, before they are put away for the winter months. Throughout the country you will see hundreds of thousands of dollars' worth of farm implements standing in the open all winter long, subject to all the attacks of winter. By painting the implements before they are put up for the winter they are secure from weather and you are protecting them from loss through rot and rust. They should be given another coat of paint in the spring, before they are put into actual use, for there is very little opportunity to apply paint to implements during the busy farming months.

Paints frequently and properly applied to farm implements is one of the

best investments any farmer can make. Compared with the advantages of painting and the results obtained, you will find that the best paint you can buy for

your implements is, in dollars and cents, the cheapest form of protection you can obtain for your farm equipment.

Fruit Should Be Carefully Graded for Export

By Edward A. Foley, American Agricultural Trade Commissioner at London

TOO much stress cannot be laid on the fact that those who expect to sell apples in the markets of Great Britain must carefully grade their produce.

Last year, because of extraordinary conditions, it happened that ungraded produce from the United States brought a fair price here, but the conditions which made this possible no longer exist. The British public at that time, having been deprived of foreign apples since the beginning of the war, was apple-hungry and eagerly purchased apples regardless of quality. This hunger has been appeased by large shipments from America, Tasmania and other places, and the normal market conditions now prevail.

It is well to note that the Tasmanian Parliament, appreciating the importance of apple grading, has issued regulations regarding the export of fruit. Stress is laid on the fact that it is believed that the standardization of fruit will result in more satisfactory returns and enable Tasmania the better to meet competition.

The chief points in the regulations are as follows: Cases must be legibly and indelibly marked with one or other of the following brands or marks: "Extra Fancy," "Fancy," "C Grade," "Ungraded"; the size of the fruit; the

varieties (if not known to be so marked); the name and business address of the person or firm who packed the fruit, or if repacked, of the person or firm who repacked it.

Apples branded "Extra Fancy" or "Fancy" must be not less in size than 2¼ inches; apples less than 2¼ inches but not less than 2 inches must be shipped in cases branded "C Grade." No case shall contain any apple below the size branded on such case, but may contain apples one-quarter inch larger in size. "Extra Fancy" apples must consist of sound, clean, well-formed fruit, free from all insect, fungus and other blemishes. Full-colored varieties of this brand shall have each apple colored to the extent of not less than two-thirds of its skin with good red coloring. Striped varieties must have not less than half their surfaces colored with distinct red stripes or streaks. Yellow and green varieties shall be even in color, but may show flushes of another color where such is natural to their respective kinds.

This action of the Tasmanian Parliament is a forcible reminder of the constant advice of the Department of Agriculture to those who would successfully handle and market fruit, to wit: "Grade your fruit."

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The Tractor for Orchard Work.

The efficiency of the tractor in the orchard is no longer a mooted question. Its adaptability and economical operation for orchard work have been fully demonstrated, and the main question with the average orchardist who is contemplating the purchase of one of these machines now is, what kind of a tractor to select.

A tractor for an orchard should, like a well pruned tree, be "low headed," in order that it will not injure the branches of the trees and can be driven close enough to them to allow the implement it is pulling to cover the surface nearest the trees. It should be built so that it can be turned in a small space. It should also be quick acting and have plenty of reserve power for emergency pulls on hilly ground without being unwieldy and expensive to operate.

While there are other features that will suggest themselves to the intending purchaser, these are the most important requirements for a tractor for the orchard. The tractor with the right requirements is undoubtedly the ideal power for the orchardist whose mode of production is intensive, whose acreage in most instances is limited, and who, on this account, grows little if any forage crops with which to feed horses. The horse must be fed whether idle or active. The tractor only eats when it works, and, given proper care, is always ready for work. In addition it will perform many duties that cannot be done by horses.

Fortunately there are now a number of tractors on the market that fill the needs of the orchardist. To the intending purchaser, therefore, the paramount thing is in making the right selection—that is, make the selection with the idea always in mind that the tractor is for the orchard first and for other things afterward.

Better Fruit Packages.

The fine grade and pack of apples put up in the Northwest has been one of the most important contributing causes in securing for the fruit of this section better prices. Other things have helped, of course, such as good quality, superior color and long keeping characteristics.

But all the apples containing these desirable qualities are not grown in the Northwest, and the apple growing districts of the Middle West and the East have not been asleep during the past few years. They are now carefully grading and packing their apples, whether packed in boxes, baskets or barrels. Grading and sizing machines adapted to the style of pack they put out have been adopted and their competition with Northwest fruit is becoming keener each year.

To some extent this is a procedure that can be welcomed by the Western box apple grower, as it is resulting in eliminating a large quantity of inferior fruit. At the same time the Northwest grower must bring himself to the realization that perfection in grading is one of his greatest trump cards and that it must be looked to with constant care.

This improvement in fruit packages is marching around the globe. It is being taken up in Australia and South Africa, Canada and Nova Scotia, and it remains for America and particularly the Pacific Northwest to remain in the lead.

"More Bees, More Fruit."

Without an exception experts on orchard fruits are recommending the keeping of bees in or near an orchard to assist in pollination. This course is recommended in addition to the planting of a certain number of trees of other varieties that are known to be pollinators in large orchard blocks of one particular variety. It has come to be recognized that bees are one of the most valuable assets that the orchardist can have and that the beekeeping industry should be stimulated and protected in orchard districts in every way possible. In fact, it will pay the orchardist to make a study of the beekeeping industry and to place as many hives as he believes will secure the necessary food in or near his orchard, regardless of the income he may secure from the honey.

This course has been advised by many prominent fruit growers in the Northwest. In Washington a campaign is being conducted to raise more bees and to protect them. In California the same action is being urged, while the matter is also receiving the endorsement and approval of a large number of growers in Oregon.

A good slogan in waging this campaign for increasing the number of these valuable insects would be "More Bees, More Fruit," and every orchardist should bear this in mind.

The Penalty for Neglect.

In an article recently published in a Hood River paper Mr. Leroy Childs, entomologist at the local experiment station, sounds a serious note of warning to growers in that section to not to neglect to spray for anthracnose. This same warning has been sounded to growers by experts in Washington and other sections of the Northwest.

It is pointed out by these experts that once this tree disease becomes deep-seated in an orchard it is more to be feared than swarms of codling moth or insect pests, which can be controlled if the proper spraying methods are pursued. Anthracnose can also be controlled in its early stages if the trees are sprayed when it is developing, viz., in the fall just before the heavy rains set in. With a profitable fruit crop being taken from the trees, many growers seem to forget that another year of harvest is coming. Why not remember that it takes a healthy tree to continue to bring this harvest and take the

necessary precautions to eliminate this most serious tree disease?

This is an instance where the old adage, "A bird in the hand is worth two in the bush," doesn't work out, for if you kill the bush you will have no birds.

RECLAIMED.

(An Ode to the Yakima Valley.)

BY ALICE CROCKER.

I belong to the land of the golden west,
The land of the bright sunshine,
Where myriads of songbirds build their nests,
Winging their way from every clime,
Back to the glad springtime.

The land of the rosy-cheeked apples rare,
Where the orchards bloom and flowers fair,
And far beyond them the desert stretches
Are lost in those misty, magic spaces—
In the purple haze of the air.

If you travel the highway, the Scenic Highway,
If you list you can hear any time, any day,
In notes sweet and clear, in coats of gray,
The meadow larks singing their roundelay.

Nature's granaries are full unto bursting.
Years past and present yield profits untold.
The reason? you question; the answer, I give it:
'Tis soil—irrigation—reclamation—and grit.

Atop of the hills beyond the fair city,
Away to the top of the hills,
What is it? A serpent, a monster crawling?
What is it afar, away up on the hill,
Encircling the crest of the hill?

'Tis the siphon, the flume up yonder
That causes the water to flow
In and out, across the valley beyond,
'Til it blossoms like the golden glow,
Like the shining golden glow.

'Tis the wonderful way the West has
Of reclaiming the desert sands;
Changing the face of the landscape
Into the fairest of lands.

It's not merely a question of luck,
Neither is it a question of pull;
The acres and sunshine and climate
Are for fellows with plenty of pluck.

So, if you are coming to Washington, stop
Where the people "go over the top";
For a cause that is right
They will boost main and might
'Til what they're after's in sight.

There is room for you, countless millions,
Join the ranks that are passing by
To the land of the western horizon;—
You shall flourish and live for aye.

Peace and plenty shall crown your endeavors;
Though you may not be acquainted with fame,
You may add to your laurels and ours;
All you need is to get into the game.

What Newspapers Interested in Fruit Are Saying

Portland's fruit paper, *BETTER FRUIT*, is widely read.—*Portland Telegram*.

Maybe you have a hard row to hoe because you don't like to hoe.—*Toppenish (Wash.) Review*.

Cull apples have their choice this year of being dried or going to the cider mill.—*Medford (Ore.) Mail*.

Apple buyers are not so numerous as they were before the meeting of the International Apple Shippers.—*Yakima Valley Optimist*.

Our notion of a waste of effort is the plan of Congress to prevent a farmer from storing a barrel of cider in his cellar.—*Fruit Trade Journal*.

While it is probably not advisable to encourage growers in allowing their hopes to soar too high, in view of the phenomenal prices realized for soft fruits this season, orchardists have every reason to be optimistic.—*Hood River Glacier*.

Crown galls on peach trees, where they are not too large, should be cut out with a chisel until a smooth surface is reached in the healthy wood. The cut should then be painted over with bordeaux paste.

Roadside Planting of the English Walnut

By A. L. Peck, Professor Landscape Gardening, Oregon Agricultural College

I PRESUME that I have been called to write on roadside planting because of the fact that the English walnut is considered a good roadside tree. I am willing to agree that this species can be used to good advantage in a good many instances. We cannot, however, plant or advocate planting any one species without making a great many reservations and expecting, in the development of plantations, to modify and to change materially as we encounter various conditions. It is in order, therefore, to look into the history of the development of roadside planting in order that we may properly understand the movement.

Many years ago, in Europe, it became evident to the rulers and to those dependent upon wood for fuel that means of increasing plantations of trees must be found. In the desire to use every available foot of ground for this purpose, the land lying along the roadways was naturally planted. In flat countries the farms were all divided into rectangular areas and the roads were naturally long and straight, and we have that famous picture in our minds of lengthy rows of trees of the same size and of the same form, and these plantings pleased us.

This idea of planting a single or double row of trees along the roadway was in vogue when the colonies were developing on the Atlantic seaboard. Naturally they planted as the Europeans had planted years before them, and then many of the towns took up the same ideas.

They planted trees in rows along the side of the road. People persisted in planting in this way until such a method became almost a strict law or custom, and today we feel that if we are going to plant in an organized way along the country road, that we must have a magnificent row of trees on either side.

This method is good, and can be used in a great many places. We must not feel, however, that this is the only way to plant roadsides. Many of our roadsides are located through hilly country; much of the land on either side is likely never to be improved; the wild woodsy

ideas are brought right to the edge of the road. Tourists and people motoring for pleasure want to see these woods. The scenery along the way makes the drive interesting because of its variety and because of the beautiful views in the distance. It would appear to any one then that the formal planting of rows of trees would not fit into surroundings such as have just been described.

It is the idea then that considerable damage may be done by the over-enthusiastic planter unless some means are taken to make him understand the fitness of things and the reasonableness of planting.

Take the English walnut, which all of you admire so much, and imagine it planted along the roadside in a hilly country where you will find large rock outcrops along this road, and tangles of underbrush, large masses of Douglas fir, the Oregon maple creeping in, unusually dry, shallow soil in places; wet, spring land in others, and in the distance of a few miles to find a very wide range of conditions.

You who have cultivated the English walnut know its requirements. You know that if you are going to make a satisfactory planting you must have the soil and other conditions conducive to its growth. From a practical standpoint, then, it will appear to you that the indiscriminate use of your favorite tree would be a failure along a road running through a variety of soils and conditions. The same, of course, is true with all other materials, and it is because of this variation that I believe that someone who understands the nature of all our different plant material must be placed in a position where he can influence to a large extent the choice of materials and their location in order to make this move a success.

A landscape architect is so trained that he should know what materials ought to be used under certain conditions. He can choose from a wide field of experience in solving planting problems and in introducing the necessary variety that makes the entire composition a pleasing one. The plant material must be of a kind that fits into its surroundings.

Adaptability of the plant to its surroundings, then, is of very great importance. Merely the idea of succeeding in planting hangs upon this adaptability. There is, however, a greater question, that of æsthetic value; a plant must fit into its place and harmonize with its surroundings or it is a failure. Landscape architects recognizing this factor would carefully design a roadside planting, varying its material as the topography and general environment of the road changed. Definite plans, after careful study of a roadside district, so that those who are going to work out the planting plan would be able to follow this development even through the course of a number of years before the planting is completed. The idea of a

To Patrons of Better Fruit:

Owing to increased cost of production and the continued high postal rates the management of Better Fruit finds it necessary to raise the subscription price of this magazine to \$2.00 after December 1, 1919. Until then subscriptions will be taken at the old rates, viz:

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definite plan on paper specifying and outlining this work is very important, and insures the ideas of some one man, studying the proposition at one time, will hold through to the end. A unity in the planting may thus be attained, whereas otherwise such a thing is entirely lacking.

This planting plan should not only call for the location of planting, but it should also specify where openings or vistas are to be made or preserved. People drive through a country and call it beautiful and interesting, or otherwise, because of the scenery which may be viewed from the road. If these views, then, are all masked by planting we lose the most valuable asset to the road.

Judicious cutting and preserving of open spaces would therefore be as necessary as good planting.

It is evident, then, that many problems, large or small, bear upon this question of roadside planting. We know that tastes of people differ. Some tastes being good and others otherwise. If we allow enthusiastic planters of various tastes to leave their marks along the highway we are going to have a sadly mixed up condition of affairs in the course of a few years. Many of you would want to plant English walnuts, but there are other people who like equally well the cut-leaf weeping birch, or the blue spruce, or the weeping willow, or the so-called monkey puzzles. Such mixed up array of material would, of course, prove a failure when we consider its value from an æsthetic standpoint. The sporadic efforts of school districts or communities must be definitely controlled or advised, or this same result will develop.

I am convinced that there is only one way to control this planting, and that is through a well defined, definite head,

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which might or should be associated with or under the direction of the State Road Commission.

Here in this office the general problem and its relation to the state at large can be definitely started and solved. Here the man in charge of the planting can keep his hand on the various problems and through his means of obtain-

ing information can become acquainted with all the topographic features along the road. In this way, then, and in this way only, I feel that a definite development along satisfactory lines may be made, and thus the roads which are to be developed in the next decade can be made attractive from the standpoint of beauty as well as of good engineering.

Strawberry Culture From All Viewpoints

Written for "Better Fruit" by a Grower

TO break right in at the start, in setting strawberry plants you should always get the very best plants obtainable. Don't think that you can economize by getting plants from a run-out fruiting bed for nothing and then expect to grow a good fruit crop. A few years ago I was talking with several of my neighbors at Twin Falls. One man remarked that he wanted to buy some strawberry plants. His neighbor spoke up and said, "You don't need to buy plants. Come on over and I will give you all you want. They're so thick they will not fruit anyway, and I intend plowing them up in the spring." Now this fellow meant well, but he evidently had never had any experience in growing fancy strawberries. The neighbor did not take his advice, however, but bought his plants elsewhere.

One should get plants adapted to the locality. If inexperienced in this line, most any reliable plant grower or nurseryman can advise you about what to get, or possibly you can get the information from successful growers in your locality.

For a family garden one ought to have two or three early variety and two or three medium or late varieties and at least one ever-bearing variety. This assures us of strawberries during the season. For commercial purposes we want to grow whatever the market

demands. We might get a much higher price by shipping to a distant city. Such being the case, we want strawberries that will be good shippers. However, whether for domestic use or for commercial purposes, we should grow at least two or three varieties to insure pollenization. There are male and female in strawberry plants. The female will not fruit unless set with a male; however, it is not necessary to set a male with a female to insure success, as the male variety has both male and female organs and is self-pollenizing.

I always advise setting plants in the spring. At that season transplanting does not set them back. For transplanting we use a tool something like a trowel, which we call a steel dibble. Sticking it in the soil five or six inches deep makes a good sized hole. It is easily handled with one hand, and while making the hole, holding the dibble in one hand, you can pick up the plant with the other hand, and thus set the plant. The roots should be well down and all spread out. Care should be taken that the crown is not covered, as plants should have air the same as human beings.

Preparing the Soil.

I prefer clover sod plowed in in the fall, and then covered two or three inches deep with well rotted manure. There is nothing equal to manure. After the manure has been put on, get on it with a good sharp disk harrow, which mixes it with the soil. The rains and snows will dissolve the manure and put it in good shape. In the spring it should all be dissolved, and then should be disked and rolled. This makes an ideal bed and gives the weeds such a backset that they are not likely to give any trouble until the plants are well started.

I would advise growing strawberries in the hill system. There is no question but that this system is the easiest, simplest and the most profitable way to grow strawberries. Make the rows about thirty inches apart, and set the plants about fifteen inches part in the rows. The rows are close together, and where irrigation is necessary one corrugation between each two rows is all that is necessary. I am referring now to irrigating after the plants are started. When first set, corrugation should be as close to the plants as possible. With the hill system you will have less trouble to keep out the weeds, the berries are much easier to pick, and will produce more fancy fruit.

There are other systems which may be followed with satisfactory results. The single hedge, and the double or

triple hedge-row systems have proven successful.

If you desire to follow the single hedge row system the rows should be at least three feet apart, and the plants should be set two feet apart in the row. Each plant should be allowed to make two runner plants, which should be layered in line with the original row, one on each side of the mother plant. This gives continuous rows with plants about twelve inches apart in the row. After the rows have been thus formed, the rest of the runners should be pruned off. This leaves room between the rows for cultivating, and pickers can get through without disturbing the vines and fruit.

In using the double hedge row system you make the rows three and one-half feet apart and set the plants two feet apart in the rows. Each of these plants should be allowed to make six runner plants. The first two runners of each plant should be layered directly in line with the original row, one on each side of the mother plant, and the remainder should be layered on each side of the row. When runners are layered in this manner the rows will be about one foot wide, and each plant will have plenty of room to develop into a heavy fruiter. After the rows have been thus formed, all other runners should be pruned off the same as in the single hedge row system.

I do not recommend the wide matted row system, which is formed by making rows from three and one-half to four feet apart and setting plants two feet apart in the rows, allowing each



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WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

plant to make all the runners it will. This makes a thickly matted row which produces small, inferior berries.

We have found two very successful ways for setting plants. In both cases corrugation should be made first. In one way we turn a small stream of water in each corrugation and when the ground is thoroughly soaked we set the plants. This should be done when the water is running. You should never attempt to set plants in soil after it has begun to dry, as it gets soggy. It cements on either side, and you can notice that throughout the season, and it is very hard to get the plants to take root.

In the other way we set the plants two inches from the corrugation in the dry soil before any water is turned on, and the water should then be turned on immediately after setting. The plants should be watered two or three times, or until they start growing, before cultivating. Of course, if you have a very small garden, just a few hundred plants, they could be cultivated after watering, where you can make cultivation with a hoe, but growing on a large scale it is impossible to get the ditch as close to the plants as it ought to be. I have found by experience that if you let the plants get dry, after they have started to grow, they often die in a few hours.

Cultivating.

Strawberries should be cultivated about the same as most garden crops. The roots should not be disturbed by deep cultivating too near the plants, and they should not be cultivated during fruiting season. There should be thorough cultivation before the strawberries come on, and then continuous cultivation or cultivating every week or two, when the weather permits, after the crop has been gathered. If you are growing ever-bearing varieties, they fruit throughout the growing season

and it is necessary to cultivate occasionally.

The blossoms should be removed the first year set. With the ever-bearing varieties the blossoms should be picked two or three times until about July 1, and from then on they can be allowed to fruit without injuring the plant in any way. They will bear a fine crop the first year, averaging about one quart per plant.

Mulching.

I am sure it pays to protect plants during severe winter weather in high altitudes, especially when first set. Straw, stable manure or most anything of the sort is suitable. It should be put on at the beginning of the freezing weather and should not be put on too deep. In the spring after the frosts are past you should remove the mulching. There should be plenty of moisture in the ground at the beginning of freezing weather. Dry freezing is very hard on plants.

At the beginning of the picking season one should have crates on hand and pickers engaged. When the berries are ripe they should be picked immediately, or there is a loss. They should be picked with short stems and not stripped off the vines. The berries should not be overripe and no ill-shaped or small berries should be put in, and the boxes should be well filled.

Strawberries are very profitable when handled in a business way. There is no other small fruit that will return the profits of strawberries. They are very easily grown. Anyone can make a success of growing the berries if they work. And in closing let me say, remember to get good plants adapted to your locality, have the soil fertile and well prepared, cultivate and water thoroughly, protect during the severe freezing weather, pick every day, giving good measure, pack in neat crates, putting in only good fruit, and the selling will be a very easy matter.

shortage, which threatens to keep much of the fruit from market.

The barreled apple crop is now estimated at 13,332,000 barrels, or 76 per cent of last year, while the box apple crop is estimated at 29,535,000 boxes, or 139 per cent of last year.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

of the Better Fruit, published monthly at Portland, Oregon, for October 1st, 1919.

State of Oregon, County of Multnomah—Before me, a notary public in and for the state and county aforesaid, personally appeared D. L. Carpenter, who, having been duly sworn according to law, deposes and says that he is the business manager of Better Fruit, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, embodied in section 443, postal laws and regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher, Better Fruit Publishing Co., Inc., 800 Oregonian Building, Portland, Oregon.

Editor, E. E. Faville, 800 Oregonian Building, Portland, Oregon.

Managing editor, none.

Business manager, D. L. Carpenter, 800 Oregonian Building, Portland, Oregon.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)

Owner, Better Fruit Publishing Co., Inc., Portland, Oregon.

Stockholders, D. L. Carpenter, 800 Oregonian Building, Portland, Oregon.

E. E. Faville, 800 Oregonian Building, Portland, Oregon.

A. W. Styles, 800 Oregonian Building, Portland, Oregon.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner, and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect, in the said stock, bonds or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is: (The information is required from daily publications only.)

D. L. CARPENTER,

Business Manager.

Sworn to and subscribed before me this 24th day of September, 1919.

(Seal.)

H. R. SHAW,

Notary Public for Oregon.

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WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Decrease in Estimate of Northwest Apple Crop

The commercial apple crop for the United States for October was estimated at 23,177,000 barrels, or 105,000 barrels increase over the September estimate and compared with a production of 24,724,000 barrels in 1918, according to the report issued by the Bureau of Crop Estimates through its fruit crop specialists. Changes have occurred in the Yakima Valley, which has decreased about 1,500 cars from the September estimate, and in Southern Idaho, which has decreased about 500 cars, due in both cases principally to late infestation of codling moth. Colorado has also decreased about 10 per cent and quality is extremely poor, particularly in the Grand Valley. On the other hand, California and Oregon have increased over the earlier estimate.

There has been an increase in the barreled apple crop in the Hudson Valley and parts of New England. Arkansas is harvesting a bumper crop of fine fruit under extremely unfavorable conditions, there being a very serious car

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WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Timely Topics and Advice to the Fruitgrower

Remember that an annual light pruning is much better than a heavy pruning every few years.

Grapes are one of the few fruit crops that require little preparation of the soil.

Did you ever stop to think that practically all the work that is done in an orchard is practically lost if the trees are not sprayed. A high pressure and hard and thorough work are essential in spraying an orchard properly. Almost as important is getting the spray on at the right time. In the enthusiasm of high prices apple growers should not forget that this is the time to spray for anthracnose and that its inroads result in one of the most serious conditions in an orchard.

The time to secure humus for your intended raspberry patch is before the plants are set. Humus in a raspberry patch is more important during the early growth of the plants than later. A cover crop of clover in the previous season to planting makes a fine soil condition for the new berry patch, either raspberries or strawberries.

Do not leave rotten peaches, pears or apples hanging on your trees after the harvest. Rotten fruit left on the trees causes disease. This is especially true of peaches, where what is known as "mummies" develops, which even spraying does not kill. This disease causes the peach to shrivel up and hang onto the trees throughout the year, scattering the disease spores and ruining a great many peaches of next year's crop. These "mummies" should be picked off and burned.

Apples that fall off the tree or are imperfect may not keep well or find a ready sale, but they can be used satisfactorily to make apple products. These products are available for home consumption throughout the entire year, which is an advantage worthy of the consideration of apple growers. The following recipes recommended by the United States Department of Agriculture will utilize the windfalls and culls. Do not can any decayed part nor allow apples to become overripe before canning. Wash the apples, which must be reasonably firm. Remove core and blemishes (pare if desirable when for immediate use). Place whole apples in blanching tray or blanching cloth

and blanch in boiling water for two minutes. Remove and plunge quickly into cold water. Pack in large, empty glass jars or gallon tin cans. Pour over the product a hot, thin syrup of about 18 degrees density. This is made in the proportion of 2¼ pounds of sugar to 5¼ quarts of water. Place rubber and top in position. Seal partially, not tight. If using tin cans, cap and tip completely. Process half-gallon or gallon containers 20 minutes in boiling water, in home-made or hot-water bath outfit; 15 minutes in water-seal; 10 minutes in steam pressure outfit, with five pounds of steam pressure. Remove jars, tighten covers, invert to cool, and test joints. Wrap in paper and store. The time of heating will have to be varied according to ripeness and condition of the fruit. Use just enough time to sterilize perfectly, and yet not enough to change the color or reduce the pulp to sauce.

Ordinarily spraying solutions are considered in quantities of 50 or 100 gallons and the proportion for small doses is neglected. Large trees may take up to 20 or 30 gallons of spray and demand a sprayer of large capacity. An apple tree 25 years old would need about 8 gallons of spray solution. The usual formula, therefore, is given as so many pounds or gallons to 50 or 100 gallons. The formulas can, of course, be reduced but it is sometimes puzzling to know just how much of the spray material to use for one gallon of water, especially so when scales or a small measure are not handy. To inform those who need but a small quantity of spray, the California State Department of Horticulture has just issued a valuable little schedule for this purpose which says:

The most widely used spraying materials for orchard and vineyard work are arsenate of lead, lime-sulphur, blackleaf 40 and Bordeaux mixture. For shrubs and plants, soap, kerosene emulsion, hellebore, Paris green and tobacco water are often used in addition to those mentioned for trees.

Arsenate of Lead.—Arsenate of lead, either paste or powder, is the most used insecticide for chewing insects. Two teaspoonsful of the paste mixed with a little water and added to one gallon of water will be strong enough for caterpillars and other leaf eaters. Three and a half teaspoonsful of the powder should be used.

Paris Green.—Paris green was one of the first arsenical poisons, but is being replaced by arsenate of lead. It may be used as a dust with lime or in water, one teaspoonful to two and a half gallons.

White Hellebore.—White hellebore is a brown powder made from the roots of the hellebore plant. It is poisonous to insects but only slightly so to man and quickly loses its toxic value. For this reason it is usually used on mature fruits or vegetables. It may be used dry with twice its bulk of flour or ten teaspoonsful to a gallon of water.

Tobacco Derivatives.—Blackleaf 40 is probably used more than any other nicotine product for aphids. It should be used at the rate of two teaspoonsful to a gallon of soapy water. Tobacco water may be made by soaking a pound of stems in two gallons of water. This should never be boiled or the active agent will be lost.

Emulsions.—Kerosene emulsion may be made in small quantities by using a generous half cake of Ivory soap, or other neutral soap, a pint of water and one quart of kerosene. Dissolve the soap in hot water and thoroughly mix in the kerosene. For summer spraying, use one part of the stock solution in ten parts of water. Very often the desired results can be obtained by washing or spraying a plant with soap alone, using a little less than half a cake of Ivory soap to a gallon of water.

Lime-Sulphur.—Lime-sulphur is not often used in very small quantities. For a small apple tree, from four to five years old, from one to two gallons of spray solution would be needed. This would require about a pint of concentrated material.

Note.—These recommendations call for a teaspoon level full.

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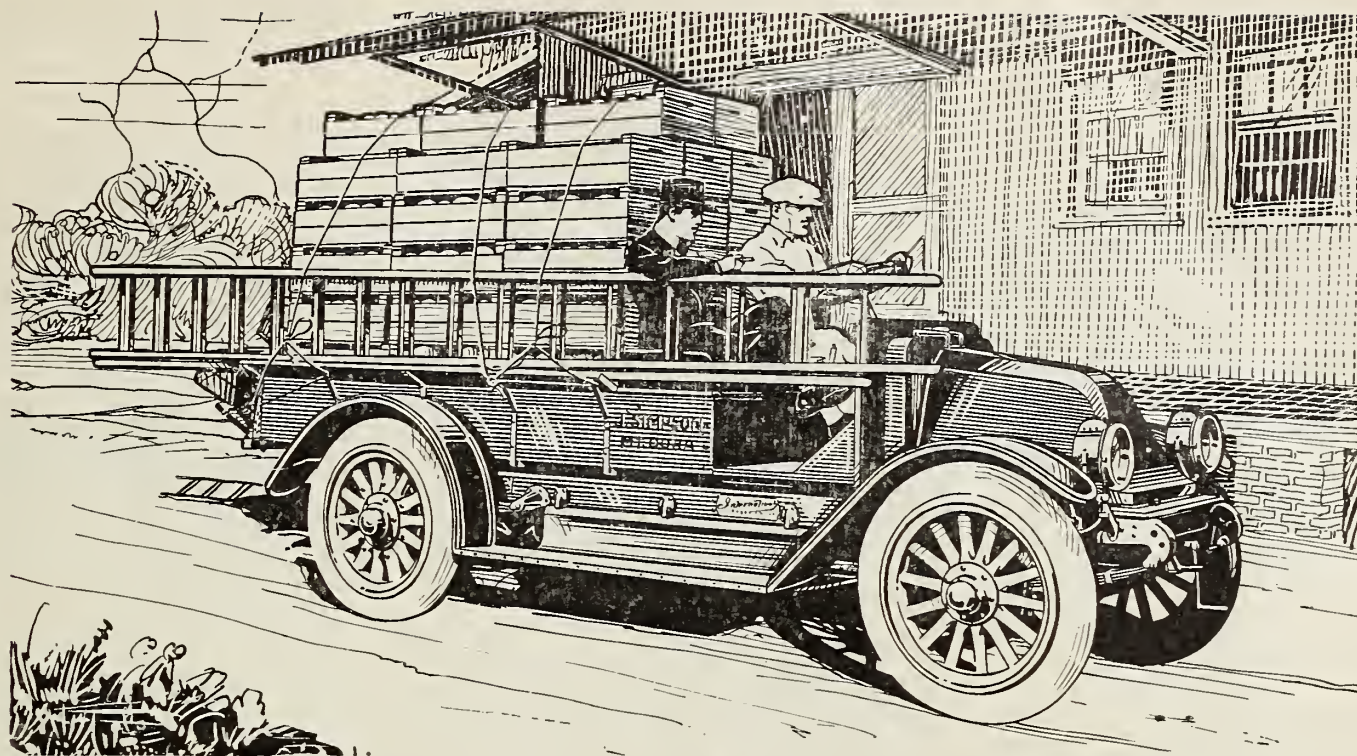
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Northwest Fruit Notes from Here and There

OREGON.

The announcement was made at Salem recently that the Steward Products Company, which will manufacture flavoring extracts, pie filling, egg substitutes, apple butter, baking powders and many other articles, adds another institution which will be a help to the fruit industry in that city. The new firm will employ about twenty-five people at the start and expects to commence operations as soon as the equipment can be installed.

The Minto prune orchard, one of the largest in the Willamette Valley and located five miles from Salem, was sold recently for \$30,000. The new owner is George W. Shand of the Salem Iron Works.

The using of a large tonnage of grapes by the Phez Company at Salem this year for jams and jellies will, it is believed, result in greatly stimulating the grape industry in that section. The fact that this company is utilizing 110 tons of grapes this year is causing the planting of a number of additional vineyards in that section.

A labor shortage in many of the apple growing districts in Oregon was reported during the month. In some of these districts a large number of pickers arrived in the various towns with the expectation that they could make from \$6 to \$8 per day. When they found that they were unable to do this many of the pickers refused to work.

Mosier orchards, it is reported, will be greatly enlarged if growers there can obtain the stock. The largest planting will be made in prunes if orchardists in that section can get the nursery stock.

A large acreage, it is reported, will be planted in berries in Clatsop County next spring. The varieties to be set out will include loganberries, blackcaps, strawberries and Cuthbert raspberries.

The record shipment of fruit from the Rogue River Valley is predicted for this year. It is stated that 1,000 cars of fruit will be shipped from this section before the 1919 season closes. Buyers of fruit for dryers and cider plants are active there and have bought many tons for these purposes.

The prune harvest in the Willamette Valley was completed about October 5 and the crop is reported to have averaged about 85 per cent of normal. In some sections the crop averaged only 50 per cent, while in others it is reported to have been above normal.

Horacio Parada and George Silva, two Chilean citizens, recently spent a month in the Hood River district studying the methods used there in growing and packing apples. Mr. Parada recently took a two years' course in horticulture at Stanford University and Mr. Silva entered the Agricultural College at Pullman, Washington, this year for the same purpose. According to these visitors, Chile is going into the orchard industry on an extensive scale.

The Hood River Apple Growers' Association has just secured 200 feet of additional frontage on the railroad and it is stated that the association plans a large development in fruit by-product manufacture next spring.

The packing plant recently opened at Roseburg by the California Packing Company corporation is said to be the largest of its kind in the Northwest and is modern in every detail. It is equipped with a restroom and other comforts and conveniences for its employees. Roseburg now has three fruit packing plants, the other two being those of the Drager Company and the H. S. Gile Company.

The Eugene Fruit Growers' Association has been successful in exporting apples so far this year. Several carloads have been forwarded to England at top prices and others it is expected will soon be sent across. According to J. O. Holt the prune crop in the Eugene district this year was about 50 per cent of normal.

Indications now point to at least 20,000 acres of Western Oregon orchards being enrolled in the new Oregon Growers' Cooperative Association. Many large orchards are reported to have been signed up recently and many new members were secured during the State Fair at Salem. The output from the orchards already secured is expected to run between 500 and 800 cars. Arrangements are being made by the association to equip the community packing houses that it will control next year with the most modern appliances and equipment.

The adjustment of the British railroad strike was welcome news to Northwest apple growers who had sold their crops to British importers. The settlement of the strike is reported to have resulted in a much better tone in the foreign market already.

T. B. Evans & Son are reported to have taken a crop of 5,000 boxes of tomatoes from five acres of land near Dillard this year. The fruit brought a price of more than 40 cents per box.

WASHINGTON.

Through the initiative of the Northwestern Fruit Exchange many of the leading apple shippers and organizations in Wenatchee, Yakima, Hood River and the Spokane districts have raised a fund of \$50,000 which will be used in advertising Jonathans to Eastern and Middle Western consumers. The campaign is already under way in the leading magazines and newspapers of the country.

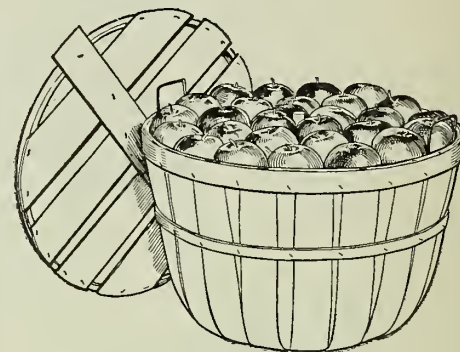
The new apple evaporator recently opened at Selah has a capacity of thirty to forty tons of green fruit per day and employs about seventy-five people. The plant represents an investment of \$65,000.

A shortage of cider presses is reported from Clarke County, Washington. The last one in that district was sold on October 9 and no new stock was in sight.

Lyle, which hasn't figured very strongly in the apple growing game heretofore, will ship fifty cars of apples this year.

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Charles R. Crewdson, a leading Wenatchee orchardist, makes the statement that fruit growers of the Wenatchee district have lost \$20,000,000 by not advertising their apples during the past seven years. Mr. Crewdson says that every grower in the Wenatchee district could well afford to give 3 per cent of his gross returns to an advertising fund to be used throughout the year, instead of spending a small amount in this way about Christmas time.

The 1919 blackberry pack of the Puyallup and Sumner Fruit Growers' Association totaled 96,000 cases and was sold before the canning season was closed. The payroll for the plant for August was \$628,000.

White Salmon reports an unusually heavy apple crop this year. It is stated that practically all the trees in the orchards there had to be propped to carry their big load of fruit, which is of fine quality.

In honor of the prune, which is the greatest crop in Clarke County, it is proposed to name one of the leading streets there Prune Boulevard and to plant prunes and walnuts alternately along the thoroughfare.

Eighty-one Japanese farm 6,800 acres, or approximately one-tenth of the irrigated area of the Yakima Indian reservation, according to figures from the records of the United States Indian Irrigation Office. These Japanese practically control the reservation melon output.

By giving a bond that cull apples will not be used for any other purpose than for by-products, the Interstate Commerce Commission will allow Washington shippers to dispose of their defective fruit outside of the state. It is said that this action will allow growers to get from \$8 to \$10 more per ton for their culls than they would receive if they sold them locally. In some sections of Washington \$15 per ton is being paid for packing house culls and \$12 for windfalls.

The Washington Dehydrated Food Company of Yakima is erecting a new plant and expects to handle 2,000 tons of cull apples this season. It is reported also that this company plans to erect a dryer at Grandview.

The apple tonnage from Underwood is expected to be about 100 cars and will be handled by the Underwood Fruit Growers' Association.

Five thousand, seven hundred and eighty-one cars of fruits of all kinds had been shipped from Yakima up to October 1.

Cashmere growers are congratulating themselves on the fact that they now have a drying plant which is taking their cull fruit, in addition to providing a substantial payroll for a number of local people.

Fearing the operations of the I. W. W. in endeavoring to influence the harvesting forces in many of the Northwest apple growing districts, residents at Grandview considered the matter of reorganizing the Home Guard to guard against such a contingency during the past month. At Hood River, Oregon, prompt action by the authorities nipped a proposed I. W. W. campaign in that section in the bud.

While a shortage of boxes was feared early in the season in Washington and other Northwest states, later reports were to the effect that the supply was equal to the demand. Growers who waited until late to order their supplies are the only one who are now said to be experiencing any difficulty in getting boxes.

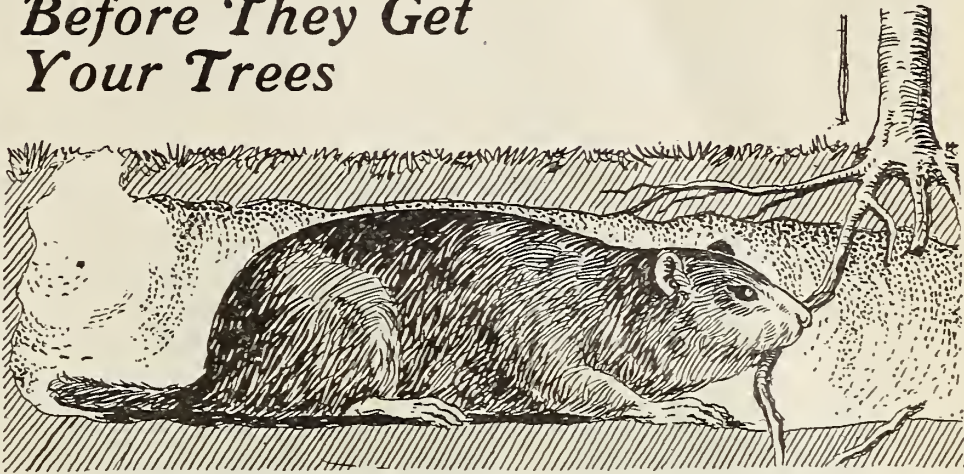
According to Fred Eberle, manager of the Yakima Horticultural Union, apples in that section are showing a loss in culls of from 15 to 50 per cent, due to scale and worms. High winds just before the apples were picked shook hundreds of tons of fruit from the trees, Mr. Eberle states, rendering them only fit for the cider mill.

Washington shipped 282 carloads of apples to eighteen different cities October 14. Idaho shipped 101 carloads to eight cities. The total for the Inland Empire was 1,110 carloads. Between 1,000 and 1,200 persons are now engaged on the 1919 apple crop in Spokane Valley. Varieties now moving are Jonathans, Wagencrs, Delicious and Grimes Golden for the most part. No serious car shortage has occurred as yet.

The Allen Evaporating Company's plant at Elberton, Washington, has commenced operations. This year's prune crop is the best the growers have had for years and the price is higher. Growers are getting \$50 a ton deliv-

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WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

ered at the dryer. They are realizing from \$200 to \$500 an acre from this year's crop. Several young orchards have been set out and others will come to bearing next year.

The Libby, McNeill & Libby cannery at Yakima in its seasonal report says this year it handled 565 carloads of fruit, for which it paid the growers \$205,000, prices ranging from \$2,330 for a carload of cherries to \$50 for a like amount of pumpkins. There was an appreciable increase in the amount and variety of produce used. The cannery is taking 100 carloads of pumpkins. In every case the growers were paid more for their products than required in the original contract.

Apple shippers of Yakima consider the Boston health authorities' attitude against apples showing spray entirely unreasonable, and are unwilling to concede that there is any possibility that the spray used could be deleterious. Formerly all fruit was wiped, but it was discovered the fruit kept better if this was not done, and hence the custom was dropped. Yakima shippers will take the case up direct with the Boston authorities, who are reported to have rejected and forbidden the sale of a carload of apples shipped by the E. E. Samson Company. On account of the extra severe battle waged against insect pests this year a larger percentage of fruit was rolled out marked by spray.

IDAHO.

Payette County had the banner apple exhibit at the Idaho State Fair and carried off 50 per cent of the prizes. This county won the first prize for its collective exhibit and secured individual prizes that totaled \$300.

Those Idaho growers who were enterprising enough to provide apple storage houses this year are now said to be richly repaid, owing to a car shortage. It is said that as a result of this condition fully twenty-five more storages will be built before another fruit harvesting season rolls around.

In the Southern Idaho district many defective apples are reported as the result of failure to spray. Frosts in May are also said to have cut down the Southern Idaho crop.

S. J. Klepfer, inspector for the Bureau of Markets, Department of Agriculture, announces that permission has been obtained from the authorities of the States of Wisconsin and New York to ship worm and scab infected apples from Idaho to those states for manufacturing purposes only.

A Boise fruit broker has announced that he will take unlimited offerings of infected apples, barring decayed only, at \$25 a ton f.o.b. shipping station for shipment to Wisconsin.

The Idaho Horticultural Department is waging an unusually vigorous campaign against infected, poorly graded and poorly packed fruit. Twenty-five inspectors are at work in the fruit growing communities watching the marketing of this year's crop, with the intention of raising the standard of Idaho fruit to the highest possible level.

Inspector S. C. Vanderburg states that the South Idaho orchards in the Boise and Payette Valleys, Canyon County and the Twin Falls district will have between 3,000 and 3,500 carloads of apples.

MONTANA.

The Bitter Root Cannery at Stevensville, Montana, had a very successful year. Peas were the main crop canned. A total of 35,500 cases of peas were canned off about 375 acres, and enough seed is on hand to plant the same acreage next year. The pea acreage is contracted for by the cannery, which furnishes the seed for the growers and pays them for the return of the seed in the fall at the rate of three cents a pound green or five cents a pound dry. In addition to the peas 1,000 dozen gallons of sour cherries and 500 cases of string beans were canned. Sour cherries are a success in the Bitter Root Valley, and between the regular market and the cannery all of the sour cherries raised can be sold at a good price.

Potatoes have proven to be a very profitable crop in Montana this year. While some areas, especially in Western Montana, yielded a total of ten or twelve tons per acre, and even more under the most favorable conditions, the average would not fall below five or six tons. The price early in October was around \$1.50 per sack, but jumped to \$1.80 the middle of the month.

The shortage of apple boxes has been a great handicap to the harvesting and marketing of Montana's apple crop. The shortage was due to underestimating the number needed by the growers, and poor transportation. To assist the growers several local saw mills have installed machinery and are turning out a limited number of boxes per day. Early in the season the price was 19 cents, but none can be had now for less than 25 cents. A large quantity of C Grade apples were shipped loose in ears, with only enough boxes to form bulkheads at the doors of the ears.

State Horticulturist A. L. Strausz reports that the McIntosh Red crop being harvested is the largest ever gathered in Montana. The apples are of excellent color and prices to the growers range from \$2.25 for the Fancy grade to \$1.50 for other grades, according to variety and condition. All fruit is free from scab and only from the old orchards is fruit found with oyster shell scale or other serious defects.

The freeze of October 8 and 9 has not proven as serious as was expected. The temperature fell to 22 degrees both nights, but the fact that there was no sun either day following allowed the frost to escape from the apples gradually. With the exception of a few of the more tender varieties no discoloration has developed and only a slight difference can be noticed in the flavor. Most early varieties were picked, leaving only the Rome Beauty, Gano, etc., out when the freeze came.

The Ravalli County Fair was a success from every point. The display of fruit and vegetables was excellent, despite the fact that the fair came during the busy season. The display from the dry land farms was good, and the many types of produce shown again demonstrated the wide adaptability of the valley for agricultural purposes.

The sugar beet harvest is in full swing. Growers are receiving \$10 per ton and the yield is estimated at ten to twelve tons per acre.

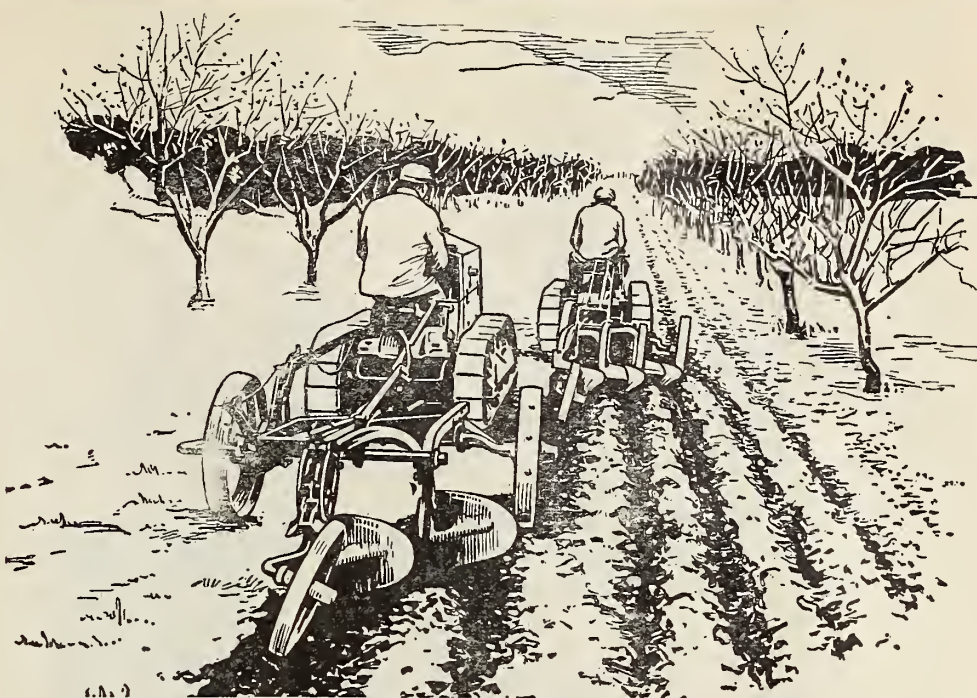
Eleven varieties of grapes, including the Concord, which is not a high-altitude variety, ripened this year on the Robert Snow ranch, five miles northeast of Corvallis, Montana. One variety, a red grape, ripened several weeks ago; others are hanging now, in purple clusters, waiting to be picked, while the later varieties require more frost to sweeten and color them. The grapes are grown on trellises and some of the vines have attained a height of six feet.

An excellent crop of big walnuts will be harvested this year on trees planted twenty years ago on the John Woods ranch, five miles north of Corvallis, Montana. The nuts are not yet all ripe, but Mr. Woods stated Sunday that he believed they would mature better this season than any year previous. They are fully as large as the old Missouri variety. Mr. Woods has lived on the same ranch for forty-two years and has a fine collection of trees and shrubs.

What They're Doing in California

According to the weekly bulletin of the California State Department of Agriculture efforts of various American interests to have set aside the embargo against apples from this country placed by the Australian government have been futile, and latest advices from there are to the effect that the embargo will be continued because it will be an aid to the Australian producer. At the same time Australia is asking the United States to purchase and consume liberal supplies of apples from that country during the period when American apples are high and the growers here are getting the benefit of the lessened supply.

An unprecedented demand for information regarding California farm lands is flooding the office of Director G. H. Hecke of the State Department of Agriculture with letters from prospective buyers in all parts of the United States. It is estimated that several hundred of these inquiries have been received during the past few weeks, and not a few of them are from men who have been or who still are in the military forces of the United States. The inquiries usually concern these classes of land: Developed farm property, and undeveloped property represented in government and state lands. One of the letters, more or less typical of others received, is from a commander of the United States Navy stationed at Norfolk, Virginia, who states that he has \$50,000 to spend as an initial investment providing he can find the sort of proposition he is looking for. An interesting feature brought out in the letter is that the erroneous idea has pervaded the East that, due to the labor situation, it may be un-



Wherever there are Orchards there are Cletracs

FRUIT growers everywhere recognize the Cletrac as the standard orchard tractor. It gets in close to the tree trunks without injuring crop or branches. It turns so short and so easily that you can readily work around trees, bushes and fence corners.

Because of its tank-type of construction you can safely drive it on side hills—where ordinary

tractors would be in danger of turning over. It runs *on top of the ground on its own tracks like a locomotive*. None of its power is wasted.

The Cletrac plows and cultivates *faster, better and cheaper* than animal power—and does it *more days in the year*.

Send today for booklet "Selecting Your Tractor".

The Cleveland Tractor Co.

19145 Euclid Avenue

Cleveland, Ohio

Largest producers of tank-type tractors in the world

Cletrac

TANK-TYPE TRACTOR

(Formerly known as the "Cleveland Tractor")

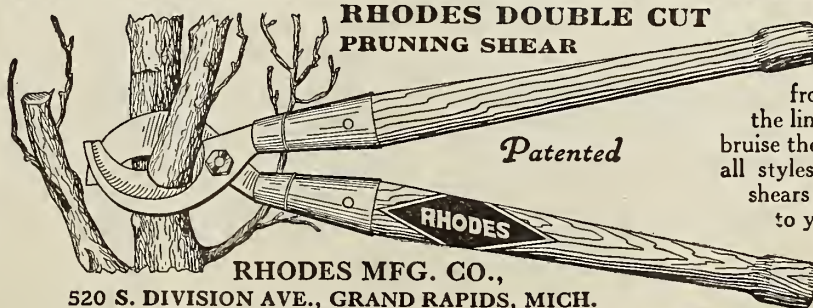


WHAT EVERY HOME CANNER SHOULD HAVE

ONE of our H. & A. Hand Power Double Seamers. It is the only hand power seamer built that will seal all sizes of sanitary fruit and vegetable cans. Write for prices and descriptive matter to Department T.

HENNINGER & AYES MFG. CO., Portland, Ore.

Builders of Seamers and Steam Pressure Canning Outfits



RHODES DOUBLE CUT PRUNING SHEAR

Patented

RHODES MFG. CO.,

520 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door.

Write for circular and prices.



The **BLASTER** says—
*"I use **GIANT**
 It gets them out
 cleaner"*

Professional blasters know explosives. They have tried all the different makes. Many of them say "Giant gets the stumps out cleaner." John Zurr of Santa Rosa, Cal., writes:

"From the beginning of the time I have been using powder for stump blasting and other agricultural work, I have found the powder made by The Giant Powder Co. to be the most satisfactory. Each certain percentage of Giant Powder is exactly what it is represented to be."

Tell your dealer you want the genuine Giant Farm Powders—Giant Stumping or Eureka Stumping. The Giant trademark on every box is your sure protection against imitations.

It will pay you to write today for our book, "Better Farming with Giant Farm Powders." It tells scores of money-saving ways of doing farm jobs—land clearing, ditching, tree planting, etc.

THE GIANT POWDER CO., CON.
"Everything for Blasting"

202 First National Bank Bldg., San Francisco
 Branch Offices: Denver, Portland, Salt Lake City, Seattle, Spokane



STUMPING

FARM POWDERS

EUREKA

DEPENDABLE TREES

Planters, it is time to order your Fruit, Shade and Nut Trees, Berry Plants, Shrubbery, Roses, etc., for fall or spring planting. Send for our large illustrated catalogue from which to select your list; it only costs you 5 cents in stamps for postage. Our trees are mighty fine, but we haven't enough. If you WANT trees, don't delay ordering.

OREGON NURSERY COMPANY
ORENCO, OREGON

profitable in California to engage in the growing of perishable fruits.

A new building will probably be erected in Sacramento in the near future to house the government insectary, which it is planned to move there from Berkeley. The insectary will be an experimental station, officials devoting their time to propagation of insects that destroy fruit and vegetable pests.

Fruit shipments from California this year handled through the California Fruit Distributors of Sacramento passed the 18,000 carload record some time ago, with 10,000 cars, principally grapes, still to be sent East. Early indications were that the shipments would total as high as 35,000 carloads, but this mark cannot be reached, due to shortage of cars.

Among the fruit shipments from the Sacramento Valley recently was a carload of Tokay grapes from the Humphrey vineyards in Sacramento County to Havana, Cuba. This was the first time a grape shipment of such size was sent to Havana.

That wine grapes in California are far from being unprofitable as yet is shown from the fact that Emerzian Brothers, who own a vineyard near Porterville, took \$25,000 worth of fruit from an eighty-acre vineyard, averaging \$312 per acre.

The California almond crop, which was picked early this season, is reported to be showing satisfactory results, and a big tonnage is now expected.

Bush fruits are now engaging the attention of fruit growers in the Turlock Valley and a large number of acres of small fruits, it is reported, will be put out in this section during the coming planting season.

Up to October 10 cantaloupes were still being shipped out of the Turlock district and the season's crop totaled around 4,500 cars.

A bunch of Thompson Seedling grapes weighing five pounds and measuring twenty-one inches in length was recently exhibited at Turlock.

Organized citrus fruit growers in Tulare County recently met and agreed to assume all the expenses of a series of fertilizer and irrigation experiments to be conducted by experts in that county. The experiments are to extend over a period of five years.

The first of the new crop of dates in the Imperial Valley appeared on the market about October 1. They retailed for 75 cents a pound.

Weather conditions for the raisin crop in California are said to have been ideal during this year and a large part of the crop is already in the stack for drying.

More than a dozen new small prune orchards will be planted in Tulare County this fall.

The apple crop in Tuolumne county is way above normal and owing to close grading and standardizing the pack is selling at \$2.40 to \$2.50 per box.

Practically all the Lake County pears will be dried this year. A big loss that has heretofore prevailed in that district was prevented this year by "strawing" the orchards which stopped the bruising of windfalls.

Nice Bright Western Pine FRUIT BOXES AND CRATES

Good standard grades. Well made. Quick shipments. Carloads or less. Get our prices.

Western Pine Box Sales Co.
SPOKANE, WASH.

9 CORDS IN 10 HOURS



BY ONE MAN. IT'S KING OF THE WOODS. Saves money and backache. Send for FREE catalog No. B 140 showing low prices and latest improvements. First order gets agency.

Folding Sawing Machine Co., 161 West Harrison St., Chicago, Ill.

Oregon Growers' Association

Continued from page 5.

however, we produced such a large tonnage that our buyers could not handle the product. Apples were dumped on markets under all sorts of conditions; throat-cutting and speculation was rife for three or four years. Finally, in 1915, when the Fruit Agency, Inc., was formed, growers and buyers were brought together, consignment was largely eliminated, new markets were developed. Advertising campaigns were launched, and today, instead of sending our apples to two or three markets, we are sending them to over one thousand markets. Producing this year approximately 30,000 cars of apples, which show every evidence of selling for a very satisfactory figure. Someone says the war did this. Well, the war helped, but it did one or two other things for the apple game: it shut off our splendid export business, and also dumped large quantities of Canadian apples into our local markets.

Oregon is the victim of speculation. I have already quoted the fluctuation of prices of prunes from 10 to 20 cents; cherries have fluctuated from 6 to 10½ cents; walnuts last year were very hard to sell indeed, despite the fact that California sold its entire crop, which went out of markets like Portland and Seattle, for 36 cents wholesale. Few Oregon growers realized such a price. Some got 30 cents, some 28, some 25, and some did not sell at all. With a superior product, a larger, better flavored product, our growers were unable to handle the situation. Simply because California was organized, was advertised and was prepared to do business. The coöperative bodies in Oregon during the past four or five years have been the balance wheel. Such organizations as the Salem Fruit Union, the Eugene Fruit Growers' Association and the Hood River Fruit Growers' Association have been the factors which have enabled growers to obtain better prices. Had they been stronger they could have done much more. The Salem Fruit Union price of 10¼ cents for cherries, including a 10% tolerance allowance, that is 10% of the cherries could be defective; an average price on large sales of prunes of from 3 to 5 cents a pound more than most independent growers received; its sale of Bartlett pears at \$85 a ton, and its sale of dried loganberries for 72 cents a pound, which will bring about 12 cents a pound to the grower for fresh fruit, are all testimonies of what marketing knowledge, coupled with good business and control of tonnage, will do.

Years ago one could speculate with bananas. As a small boy I can remember one incident which happened in New Bedford, Massachusetts, when three steamers came into the harbor within a few days loaded with bananas. There were no refrigerator cars in those days, no good marketing machinery for handling bananas. Those bananas finally sold for 5 cents a bunch, and I have commonly bought six dozen for 25 cents on a Saturday afternoon. Certainly the men who grew those bananas didn't make very much. Today bananas are

"Take it from Me"

says the Good Judge



Wise tobacco chewers long since got over the big-chew idea. A little chew of this real quality tobacco gives them better satisfaction and they find their chewing costs even less.

With this class of tobacco, you don't need a fresh chew so often and you find you're saving part of your tobacco money.

THE REAL TOBACCO CHEW*put up in two styles***RIGHT CUT** is a short-cut tobacco**W-B CUT** is a long fine-cut tobacco

Weyman-Bruton Company, 1107 Broadway, New York City

*The power chain**The Gasoline of Quality*

"Red Crown" has a continuous, uniform chain of boiling points which gives easy starting, power and mileage. Mixtures have "holes" in the chain. Look for the Red Crown sign before you fill.

STANDARD OIL COMPANY
(California)**APPLES****PEARS**

For European

Distribution

Gerald Da Costa

Long Acre, Covent Garden, London

Cables: "Geracost, London."

Codes: A. B. C. 5th Edition and Private

SHIPPING AGENTS:

Lunham & Moore, Produce Exchange, New York

sold at a fixed price, and furnished in constant supply, a splendid testimony to good organization.

It is becoming more and more difficult to speculate with California products, such as oranges, raisins, walnuts, owing to the fact that these industries are organized along state-wide lines, are properly financed, are well advertised, and control more than 50 per cent of the tonnage. The pear price in the past in the Pacific Northwest is a fine testimony of the need of the growers to

arouse themselves and become thoroughly organized. When purchased as they were this year at prices ranging from \$22 to \$85 a ton, there is something wrong with our business methods, especially when California firms received from \$75 to \$85, and buyers claim our pears are superior.

When we first started this organization there was some opposition from cannerymen, or at least some concern on their part. Now they are coming to our office, are coming in personally, and saying that this movement is the best thing that has happened in the state. There are forty-six canneries in the state already. Some of these canneries will have a hard time when business begins to readjust itself and prices begin to come down. If, however, we can establish a good, fair price, and stabilize the price paid for products which go to the canner, we will eliminate throat-cutting in the cannery game and keep this splendid industry permanently in this state.

When a fruit grower comes to town and goes into a store he doesn't walk up to the owner and say, "I'll give you so much for that sewing machine, that pair of shoes, that piano," or whatever the commodity may be, but he asks the owner what he will take for the commodity. On the other hand, when the fruit grower or farmer comes to sell anything, he always asks, "What will you give me?" There certainly is something wrong in this combination. An individual grower cannot fix a price. He hasn't the money or time in which to find what a good, fair price would be. Large groups of growers can find what a fair price is, can establish this price, thus enabling the grower to name his price for his commodity. A staple commodity like prunes, canned goods, and even apples, should have a true value. And this value can be established if one cares to take the means to get the proper sources of information.

Some of our critics are taking us to task because we are going to sell apples, pears, prunes, canned goods, dried fruits

and berries all in one organization. They say this cannot be done. Well, the California state-wide coöperative organizations would give a great deal if they could combine. It is too late for them to do it, however. When a man says he cannot combine these lines call his attention to the fact that the California Packing Corporation handles many varied goods. They control the salmon packing of Alaska, do a huge business in canned and bottled goods in



A Feeling of Prosperity

comes to one with the possession of a bank account; it brings also a sense of protection against unexpected emergencies.

Your banking connection, too, if it be with a bank like Ladd & Tilton that has had sixty years of experience, will be of great assistance to you in business matters.

LADD & TILTON BANK
Portland, Oregon



Berry Plants Wanted

Loganberry, Burbank Phenomenal, New Oregon Strawberry and Cuthbert Raspberry. Must be True-to-Name Plants.

Write "M. J. M." care Better Fruit, Portland, Oregon



"My, what a relief!"

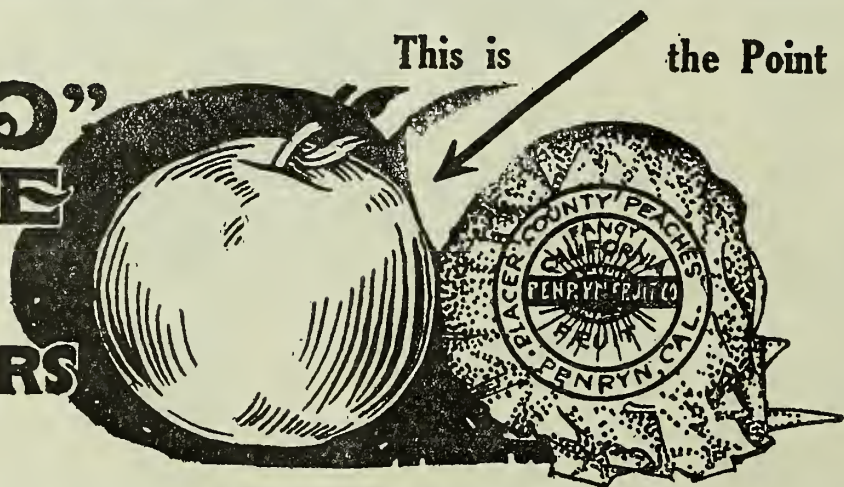
THAT rheumatic twinge doesn't bother you long after you've had the aching part bathed with the old standby—Sloan's Liniment. You just put a little on—it doesn't stain the skin—gently pat it, and it penetrates, sending a warm, soothing glow through the tortured part.

It stands alone in promoting quick relief from after-effects of exposure, lumbago, sciatica, muscle and joint strains, pain strains and stiffness, neuralgia, bruises. There's a successful record of 38 years back of Sloan's Liniment.

Keep a big bottle ready for use—it may be any minute. The big bottle holds six times as much as the small one. 35c., 70c., \$1.40.

Sloan's
Liniment
Keep it handy

"CARO"
FIBRE
FRUIT
WRAPPERS



Chemically Treated
"Caro" Protects

"Caro" from DessiCARE (to dry up)

"Caro"
Prolongs the
Life of Fruit
Why?

Fruit decomposition starts from a bruise which opens tiny holes and permits the juice to escape and BACTERIA to enter. "Caro" clings closely and dries up the escaping juice. "Caro" ingredients harden the spot, kill the BACTERIA, arrests the decomposition—and thus **PROLONGS THE LIFE OF FRUIT**. If your fruit is worth shipping it is worth keeping in best condition.

Demand "CARO"—Wrap Your Fruit in "CARO"—The Fruit Buyer Knows "CARO"

Order from Any Fruit Company or American Sales Agencies Co., 112 Market St., San Francisco

MYERS

HONOR-BILT
POWER PUMPS

No more hand pumping and carrying water in pails. Myers Self-Oiling Bulldozer Power Pumps give running water—all you need and wherever you need it. Extra strong and of simple, high grade construction. Moderate in cost, requires minimum attention and is easy to install. Is self-oiling, has covered working parts, large valves, liberal water-ways. Operated by gasoline engine or electric motor. Sizes for every need, 200 to 3000 gal. per hour capacity. You know it is better because it's a Myers. For the Myers Line of Pumps, Door Hangers and Hay Tools is acknowledged the standard in quality. Ask your dealer or write us. Booklet on request.

135 Fourth St. F. E. MYERS & BRO. Ashland, Ohio

PUMPS

FOR EVERY PURPOSE

Mitchell Northwest Distributors
Portland, Ore.

G. L. Davenport

Grower and Shipper

MOSIER, OREGON

MAIN OFFICE
147 Front Street, PORTLAND, OREGON

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

110-112-114 Front Street
PORTLAND, OREGON

Write us what you have to offer — Car lots or less

California, handle pineapples in the Hawaiian Islands, and handle huge quantities of dried fruits and even dried beans, all through one organization, all advertised by one brand. Armour & Co., the well-known meat packers, not only handle all classes of meat and meat products, but do a huge business in dairy products, poultry products, grape juice and canned goods, handling 300 products with one brand. Montgomery, Ward & Co. and Sears, Roebuck & Co. and similar organizations are paying huge dividends, millions of dollars annually, and they handle everything you need in the home or on your farm. The large department store of the city does likewise, the wholesale grocer handles various products. It is the trend of the times. It is the tendency in the United States, in England and Germany, in every big industrial nation. By combining these products overhead is reduced, the volume of business is increased, the force of advertising is enormous. Each product handled advertises the remainder. It is good sound business, and just as sound for a bunch of fruit growers as for a private corporation.

Turn over the pages of the popular magazines; you won't find Oregon advertisements outside of some splendid "Phez" advertisements, some of Hood River apples, or some Skookum apples, little is known concerning Oregon. Yet the word California is found in all these magazines, and has become so well advertised that it is probably the best-known section of the world today, a household word in every home. Who has not heard of Sunkist oranges; when you say Sunkist you mean oranges, and when you see an orange you think of California. The Sunmaid raisin development has been marvelous. I have been told that they increased the use of raisins in bakeshops alone from 700 tons to 30,000 tons in four years, and they have made their growers prosperous and have stabilized their industry. The California prune growers are going to spend \$200,000 this next year advertising Sunsweet prunes. How long will it be before the word "Sunsweet" will be the standard for prunes and the one brand that the housewife all over the United States will ask for?

It is time for us to arouse ourselves; to advertise Oregon's superior products.

Our prunes will make a wonderful pie. They are large, tender and sufficiently tart for such purposes. Advertising will bring to us the same results that it has to California. Two organizations in California last year received 20,000 letters of inquiry from people in the East who had read the advertisements and were interested in making California their home.

We are going to adopt one brand, this one brand to advertise all the products which we now handle, and that one brand will be advertised freely in such

BEES

PAY. Easy, interesting work, with money for home use. Send 50c today for 24-page Bee Primer and six months subscription to the American Bee Journal. Catalogs of supplies sent free.

American Bee Journal

Box 36 HAMILTON, ILLINOIS

No Orchard or Farm is Complete Without Our Latest Model

COMMERCIAL SIZE All Purpose Evaporator

Write for Folder D.

HOME EVAPORATOR CO.

ST. LOUIS, MISSOURI

5 DAY FREE OFFER

"It Leads the Way"

Try the MERRY GARDEN Auto Cultivator on your own farm. We will allow a thorough trial of 5 full days without placing you under obligation to keep it. This is the most wonderful farm help devised in years.

MERRY GARDEN AUTO CULTIVATOR

No more pushing, pulling, twisting or straining. The 2 h. p. motor furnishes the power, which is controlled from the adjustable handles. Simply guide it. Does the work of 4 men quicker—better—cheaper. Goes between wide rows and straddles narrow ones. Travels 120 to 200 feet per minute. Cultivates the soil thoroughly no matter how hard baked. Furnishes portable power to run the churn, separator, saw, lawnmower and other machines.

Guaranteed
Sold on a Money-Back Guarantee. Write today for folder and full particulars.

Atlantic Machine & Mfg. Co.
468 W. Prospect Avenue
Cleveland, Ohio

ACME BOX STRAPPING

Insures Safe Deliveries—Prevents Pilferage



Acme Nailless Strapping, with Seal Applied



Acme Nailless Strapping

Write for the Acme Catalogue of Complete Shipping Room Supplies

ACME STEEL GOODS CO., Chicago, 2840 Archer Avenue, Manufacturers

SAN FRANCISCO, 209 California Street
SEATTLE, Foot of Main Street

PORTLAND, 8 Front Street
ATLANTA, 10 Tift Street

Try This One-Man Stump Puller 30 Days **FREE**

SEND NO MONEY!

If you have useless stump land, I want to PROVE to you on your own stumps—30 days before you pay me a penny—that ONE MAN with my famous Kirstin Stump Puller can pull big, little, green, rotten, low-cut, tap-rooted stumps, hedges, trees or brush. I want to convince you that this is the easiest, quickest and cheapest way to pull stumps.

One Man Alone Handles Biggest Stumps!

Thousands of Kirstins now in use!

Read These Letters!

I pulled one pine stump 3 ft. across top. My One-Man Kirstin pulls bigger stumps than I ever expected.

Mr. J. Erkkila, Calumet, Mich.

My Kirstin pulls stumps up to 2 ft. blind maple 8 to 16 inches. Pulled tree 150 ft. high and 22 inches at base, in 15 minutes.

A. H. Jeffery, Goble, Oregon.

My Kirstin pulled stumps we thought it could not pull.

Mr. E. A. Buckley, Bay Springs, Miss.

Quick Shipment From

Escanaba, Mich.
Atlanta, Ga.
Portland, Ore.
Soo Canada

After 30 days trial—if satisfied, keep puller. If not pleased, send it back at my expense. You don't risk a penny. Four easy ways to pay.

Kirstin One-Man Stump Puller Single, Double, Triple Power!

Weights less—costs less—yet has greater speed, strength, power and lasts longer! Clears one acre from one anchor! Easily moved around field. A few pounds pull or push on handle exerts tons on stump—due to wonderful leverage principle. 3-year guarantee against breakage!

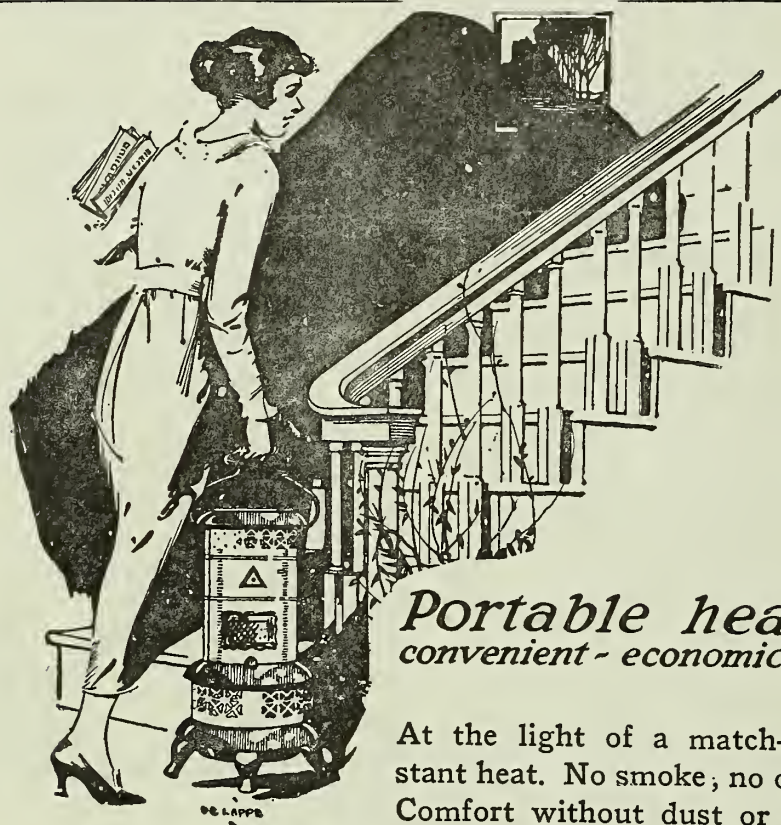
Get My Big New Book NOW!

Tells how one man pulls stubborn stumps in few minutes at low cost. Explains all about different speeds. Also patented quick "take up" for slack cable. Describes Kirstin one man Clutch Model; Kirstin One Man Drum Model; and Kirstin Horse Power Model. Get the book and Special Agents' Offer. Shipment from nearest distributing point saves time and freight. Write today.

A. J. KIRSTIN, Gen. Mgr., A. J. KIRSTIN CO.

257 E. MORRISON ST., PORTLAND, ORE

Factory and General Office
Escanaba, Mich.



Portable heat—convenient - economical

At the light of a match—instant heat. No smoke; no odor. Comfort without dust or dirt. Oil consumed only as needed.

Pearl Oil is refined and re-refined; pure and clean burning. Sold in bulk and in five-gallon cans. Order by name—Pearl Oil.

We recommend Perfection Oil Heaters.



STANDARD OIL COMPANY
(CALIFORNIA)

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

a way that the consumers will become familiar with Oregon. Whatever our sales word may be, we will have written on all our advertisements the word "Oregon" in a very conspicuous manner. There is no state in the Union that can surpass Oregon in the quality of its horticultural products. One of our functions will be to educate the consumer so that they will recognize this fact.

In closing I wish to say a few words on the financial end of our organization. This is the end that especially appealed to me when I first heard of the proposed plan. It has attracted the attention and support of our leading bankers. We have, first, the Oregon Growers' Coöperative Association, which is the selling organization. We have the Oregon Growers' Packing Corporation, which packs our fruit, both organizations operating at cost. The need of the two organizations is, namely, that we cannot issue to ourselves warehouse receipts, but that the association can turn over the fruit to the corporation to be packed, can immediately secure from the corporation a warehouse receipt which can be cashed, and this money can be used to finance the growers. Thus the grower will receive up to 90 per cent of the value of his fruit at delivery. The same officers and the same directors hold forth in both organizations, are fruit growers, and are elected by the stockholders. To build our buildings we have both common and preferred stock. The common stock is issued to growers on the basis of ten dollars an acre, which is paid in two five-dollar notes, one due December, 1920, and the other December, 1921. The payment for these notes is taken out of the sale of the crops. In exchange for these notes the grower is given a ten-dollar share of common stock. In addition to the common stock we can issue preferred stock up to the same amount as the common stock. This can be held by anybody, but will be retired one-fifth annually. The money from the common and preferred stock will be used to finance our buildings, put up our community packing plants and so forth. The preferred stock can easily be retired from packing profits. For example, the Salem Fruit Union last year handled 4,000,000 pounds of prunes, making \$26,000 in packing profits. This organization did over a million dollars worth of business last year at a cost of \$16,000, or 1 1/10%. That the organization was needed is shown by the way growers are responding. Despite the fact that we started in July, during the cherry and berry harvests, that we have had to encounter the grain harvest and vacation period, we have nevertheless signed up over 10,000 acres and have 20,000 in sight. It now looks as though the association would do over \$5,000,000 worth of business during the first year, will control over 70% of the fresh fruit tonnage of Western Oregon, more than half of the prunes, nearly all the walnuts and a large percentage of the products for canning, such as cherries, berries and pears. Truly a remarkable record to attain in so short a time.

PRINCE ALBERT

the national joy smoke

Toppy red bags, tidy red tins, handsome pound and half pound tin humidors—and—that classy, practical pound crystal glass humidor with sponge moistener top that keeps the tobacco in such perfect condition.

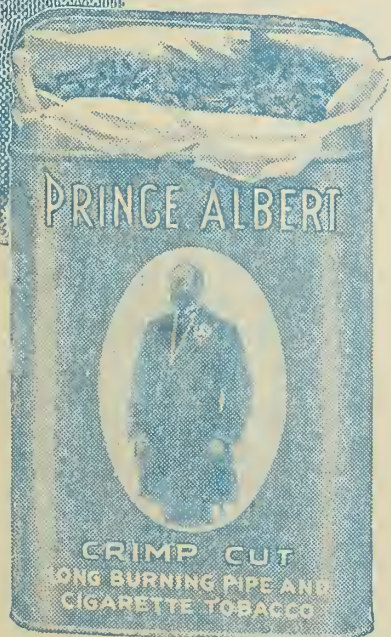
Copyright 1919
by R. J. Reynolds
Tobacco Co.

PUT it flush up to Prince Albert to produce for your personal satisfaction, right off the windmill, more smoke happiness than you ever before collected! P. A.'s built to fit your smokeappetite like kids fit your hands! It has the jimdandiest flavor and coolness and fragrance you ever ran against!

Just what a whale of joy Prince Albert really is you want to find out the double-quickest thing you do next! And, put it down right here as to how you could smoke P. A. for hours without tongue bite or parching. Our exclusive patented process takes care of that because it cuts out bite and parch!

Realize what it would mean to get set with a joy'us jimmy pipe, or the papers, and to fill 'er up every once and a while! And, puff to beat the cards! *Without a comeback!* Why, Prince Albert is so all-fired-good you feel like you'd just have to eat that fragrant smoke!

R. J. Reynolds Tobacco Company, Winston-Salem, N. C.



THE WORLD-
OUR ORCHARD

STEINHARDT & KELLY

NEW YORK

UNQUESTIONABLY THE
MOST IMPORTANT FACTOR
IN THE DISTRIBUTION OF
THE COUNTRY'S FANCY
APPLES
AND OTHER FRUITS

OUR MARKET-
THE WORLD